UNITED NATIONS DEVELOPMENT PROGRAMME

UNDP

Distr.
RESTRICTED

DP/GC/BOL/R.1
30 March 1973

ORIGINAL: ENGLISH

GOVERNING COUNCIL
Sixteenth session
6-28 June 1973
Agenda item 3

COUNTRY AND INTERCOUNTRY PROGRAMMING

BOLIVIA

UNDP assistance requested by the Government of Bolivia for the period 1972-1976

EMBARGO:

NOT FOR PUBLICATION UNTIL FORMALLY APPROVED BY THE GOVERNING COUNCIL

73-05234

TABLE OF CONTENTS

		Paragraphs
Basic Data		
Table I - Estimated Technical Assistance Resources		
Summary of Annex I		
Part I:	Brief statement of current overall development objectives and priorities	1 - 27
	A. Development objectives and priorities	1 - 10
	B. Relationship between national development priorities and the UNDP Country Programme	11 - 24
	C. Bolivia's need for special treatment	25 - 27
Part II:	Description of Sectorial needs proposed to be met with UNDP assistance	28 - 209
	- Infrastructure	28 - 93
	- Agriculture	94 - 121
	- Natural Resources	122 - 159
	- Human Resources	160 - 190
	- Industry	191 - 207
	- Project Control, Planning and Support	208 - 209
Part III:	ANNEX I - Preliminary List of Projects with Estimated Government and UNDP Inputs in financial terms for the period 1972-76	
Part IV:	ANNEX II - Preliminary List of Projects with Tentative Timetable for project formulation and Implementation	

-o-o-o-o-o-o-o-

BASIC DATA

Area	1,099,000 km2.
Density per square kilometre	4.5
Population (1971)	Urban - 1,721,000 Rural - 3,052,000
Population growth rate (1965-70)	Urban - 4.09 Rural - 1.49

Spatial distribution - 1968:

Physiographical area	Population area percentage		Demographic density people/km2
Altiplano	49	16	12.8
Valleys and Yungas	35	22	6.9
Plains	16	62	1.1
Total	100	100	4.3

Source: "Estrategia Socio-Económica del Desarrollo"

Illiteracy rate: 63%

Work force: The work force represents nearly 44 per cent of the total population.

Employment: The data on employment provided by different sources are conflicting, but it is estimated that between 25 and 30 per cent of the labour force is unemployed (including disguised unemployment and housewives that receive no remuneration). The agricultural sector absorbs the major part (68 per cent) of the employed work force. The manufacturing industry is second employing 8 per cent. Three per cent of the total employment is in mining and services employ another 14 per cent. The employment situation confirms that the Bolivian economy is at a low level of development.

./..

Utilization of the Gross Internal Product 1/
(in millions of 1968 pesos)

	1968		1969		1970		1971	
	Value	%	Value	%	Value	%	Value	%
1. Consumption	8,790	86.2	9,285	87.2	9,618	85.8	10,270	88.3
a) Private	7,712	75.7	8,151	76.6	8,435	75.3	9,037	77.7
b) Central Govt.	1,078	0.5	1,134	0.6	1,183	0.5	1,233	0.6
2. Capital Formation	1,836	18.0	1,725	16.2	1,764	15.7	1,752	15.1
a) Fixed	1,770	17.4	1,559	14.6	1,564	14.0	1,702	14.6
b) Stock increase	66	0.6	166	1.6	200	1.7	50	0.5
3. Foreign trade	-434	-4.2	-362	-3.4	-177	-1.5	-390	-3.4
Exports	2,016	19.8	2,056	19.3	2,193	19.6	2,060	17.7
Minus imports	-2,450	-24.0	-2,418	-22.7	-2,370	-21.1	-2,450	-21.1
GROSS INTERNAL PRODUCT	10,192	100.0	10,648	100.0	11,205	100.0	11,632	100.0

Source: Ministry of Planning and Coordination

1/ These estimations are based on information provided by public organizations, the Ministry of Planning and, indirectly, by international organizations that have had missions in the country in recent times.

Rate of annual Gross Internal Product increase:

1968	7.2 %
1969	4.5 %
1970	5.2 %
1971	3.8 %

Gross investments in relation to the GIP: Fifteen and one tenth (15.1) per cent in 1971, but a tendency towards decrease was noted beginning in 1968 (18.0).

Gross Internal Product by origin of economic activity
(in millions of 1968 pesos)

	1970		1971[p]	
	Value	%	Value	%
1. Agriculture	1,948	17.4	2,050	17.6
2. Mining	1,466	13.1	1,524	13.1
a) Minerals	(1,218)	(10.9)	(1,160)	(10.0)
b) Petroleum	(248)	(2.2)	(364)	(3.1)
3. Manufacturing	1,542	13.8	1,582	13.6
4. Construction	461	4.1	479	4.1
5. Energy	200	1.8	212	1.8
6. Transportation and communications	911	8.1	939	8.1
7. Trade and finance	1,607	14.3	1,634	14.1
8. Central Government	949	8.5	1,006	8.7
9. Others (property urban and services)	2,121	18.9	2,206	18.9
INTERNAL PRODUCT	11,205	100.0	11,632	100.0

Source: Ministry of Planning and Coordination
Note: p - preliminary

Foreign trade* (millions of dollars)

	1968	1969	1970	1971**
Exports (f.o.b.)	157.1	176.3	197.6	189.5
Imports (f.o.b.)	163.5	163.5	169.9	174.5
Balance of trade	-6.4	13.2	27.7	16.0

Source: IMF
Notes: *Data are adjusted for the balance of payments and therefore differ from the customs' statistics. The data on exports excludes payments for mineral processing.
**Source: Banco Central de Bolivia, preliminary data on the 1971 balance of payments.

./..

Types of Imports (percentages):

	1968	1969	1970	1971
Finished goods	21.0	20.0	19.9	19.8
Intermediate goods	32.0	29.9	30.0	31.5
Capital goods	47.0	50.1	50.1	48.7

Source: Ministry of Planning and Coordination (data previously prepared)

Types of exports and sector of origin (percentages):

	1968	1969	1970*	1971
Mining products	81.5	84.4	91.2	82.2
Tin	54.3	51.8	44.6	49.8
Antimony	3.5	5.6	13.6	4.6
Copper	4.5	5.6	5.5	3.7
Wolfram	5.7	5.6	7.7	6.5
Silver	6.6	5.4	4.6	3.9
Other minerals	6.9	10.4	15.2	13.7
Petroleum products	14.2	11.6	4.5	11.7
Agricultural products	3.5	3.1	3.3	4.7
Industrial products and others	0.8	1.0	1.0	1.4
TOTAL EXPORTS	100.0	100.0	100.0	100.0

Source: National Institute of Statistics (data previously prepared)

*Preliminary data

TABLE I

Estimated Technical Assistance Resources for the Programme Period (in thousands US$)

SOURCE	1972	1973	1974	1975	1976
Bilateral Programmes	No reliable data available				
Multilateral Programmes other than UNDP and the UN Organizations	No reliable data available				
UN Organizations Regular Programmes:					
UNICEF	410	575	600	570	570
WFP (•)	2.386	2.527	1.290	910	910
WHO/PASB		339	364	382	402
Sub-total	2.796	3.441	2.254	1.862	1.882
UNDP 1/	4.077	4.607	2.571	1.785	914
Grand Total	6.873	8.048	4.825	3.647	2.796

1/ This amount is based on the Indicative Planning Figures approved by the Governing Council for the period 1972-1976 and doesn't include the 1.046.000 set aside in the unprogrammed reserve.

(•) The figures refer to food and feed assistance provided to social and economic development projects and not to technical assistance.

S U M M A R Y A N N E X I

Sectorial Composition (in thousands of US$ dollars)

Sector	Ongoing Projects (a)	New Projects (B)	Total 1972-76	% of the IPF
Infrastructure	2.366	2.773	5.139	34.26
Agriculture plus livestock	3,709	1.183	4.892	32.62
Natural Resources	1.179	908	2.087	13.91
Human Resources	424	178	602	4.01
Industry	683	335	1.018	6.79
Project Support and Coordination		216	216	1.44
TOTAL	8.361	5.593	13.954	93.03
Programme Reserve			1.046	6.97
GRAND TOTAL			15.000	100%

PART I

A. Development Objectives and Priorities

1. The traditional problems which confront Bolivia have reached a critical point in the last years and they are closely linked to low levels of production in limited sectors, high unemployment rates and low income levels, lack of adequate transportation systems, poor sanitary conditions, etc. Also, the Bolivian economy, due to its under developed characteristics, is strongly affected by the world economy. This is reflected on the whole in its production capability, its foreign trade as well as in the prices of exportable products. In order to solve these problems, a National Development Plan is being formulated which has as a main goal the solution of these problems, as reflected in the middle term objectives of the Plan.

2. The one indispensable condition to reach these objectives is to bring about a rise in the country's economic activities. For this, it is necessary to slow down the depressive tendency noticed in the last few years and which has brought about a general aggravation of the economic and social situation. Other factors which must be resolved are those related to the inadequate distribution of population, the low levels of instruction, the inadequate utilization of financial, physical and human resources and above all else, the social and cultural conditions which have a direct influence on the above problems.

3. Besides seeking to solve the more immediate problems, the National Plan will attempt to introduce new means and mechanisms into the Bolivian economy which are based on the active and conscious participation of all social sectors. Only under these conditions will it be possible to begin the transformation of the productive apparatus in order to satisfy the needs of the majority of the population, thus in this way beginning to meet the goals of national development.

4. The general goals and objectives of the national economy and of social development plans are:

a) Accelerated growth of the internal gross product so that the national community may develop a larger volume of goods production and of services. Also to achieve a more just distribution of the national income, which will tend to improve the population's standard of living.

../

b) To promote the physical, economic and social integration of the country in order to achieve national stability. To promote the formation of a national market that will reach out to all regions, with the active participation and to the advantage of all social strata.

c) To diminish the external dependence so that in time the country will attain self-sufficiency through the control of all the internal resources while at the same time modifying the traditional scheme of the country's economic relations with the outside.

d) To promote a more rational occupation of the national territory, achieving in time the total control and use of the economic space.

e) To diminish unemployment through intensive utilization of all human resources.

f) To diversify the economic structure of the country through a permanent increase of the efficiency of the secondary sector and by obtaining the highest productivity in the primary sector of production.

g) To promote scientific investigation to help bring about a greater productivity of the total economic system.

h) To diminish the gap between the cities and the rural areas by improving the standard of living of the campesinos, thus attaining a more just society.

i) To participate in the schemes of regional and subregional integration and thus fortify the various basic areas of potential development. The medium-term objectives of the national development plan are directly related, in that context, to the levels of employment, production, investment, terms of payment, trade, services, salaries and prices, productivity, public finance, monetary problems and credits.

5. Based on the economic and social situation of the country, as well as on the international situation and on the availability of natural resources, the following are the medium-term objectives:

a) To increase and diversify the country's mineral production, trying at the same time to promote the exploration of new deposits and to increase the process of mineral reduction.

b) To exploit extensively and intensely the agricultural regions to supply the national markets, more adequately, and to have surpluses for export.

../

c) To rationalize and increase the exploitation of livestock.

d) To conclude the legal phase of the agrarian reform.

e) To increase the exploration of hydrocarbons, and to up-grade the level of industrialization of this sector, so that surpluses can be obtained for export.

f) To promote the establishment of strategic transformation industries, which would utilize to a maximum the natural resources of the country. At the same time, efforts will be made to modernize and enlarge the existing industry, so that in due time competitive prices can be obtained for Bolivian goods in the international markets and particularly from the regional and sub-regional markets.

g) To maximize the utilization of the energy capacity of the country, maintaining at least the present growth rate to cover the potential energy demand of the industrial sector.

h) To rationalize, integrate and fortify the transport systems.

i) To continue the construction of highways as well as to unite the oriental and occidental railroads lines and to develop the airports infraestructure as well as the river transport systems.

j) To accelerate the processes of evaluation and inventory of the natural resources, to ensure their rational exploitation, while the ecological balance is observed.

k) To promote the tourist industry by providing it with the proper infraestructure.

l) To accelerate the educational reform and integrate the educational system.

m) To promote the development of a medical system and plan that will provide national health coverage to the population as a whole.

n) To promote the physical planning of the country, with special emphasis given to urban planning.

o) To adapt technological advances to the needs and possibilities of the country.

p) To propel the administrative reform in such a manner that the public sector will be institutionally strenghtened.

../

q) To establish geo-economic regions that will contribute efficiently to the development of the country, achieving a more active participation of the total population in the process of development.

r) To blend the attributes and behaviour patterns of the population to the needs of the national development and integration efforts.

6. The permanent and general objectives of the National Development Plan as well as the middle term objectives are to improve the living conditions of the population, which calls for a dynamic growth of the internal production patterns and which, in effect, calls for the accelerated development of the most important sectorial activities.

7. On the other hand, since the years 1965-71 did not achieve the needed growth rates within the economy, a clear objective of the present Development Plan is to increase the rate of growth of the gross internal product in elation to past years.

8. Taking into account the realistic and considerable evolution of various factors such as an increase in the prices of minerals and of certain agricultural products such as cotton, the following growth rates are being established as the basic objectives of the development plan:

1972	7%
1973	8.6%
1974	9.8%
1975	10.7%
1976	12.4%

9. To reach these objectives the following sectorial rates of growth goals would need to be obtained:

	1972	1973	1974	1975	1976
Mining	4.7	12.6	10.4	18.8	2.0
Industry	4.7	7.9	13.4	14.6	5.5
Agriculture	7.0	15.6	15.0	13.4	5.2

10. Other sectors which will contribute to the increase and the internal products will be construction, energy, transport and communication and housing.

B. Relationship between the National Development Priorities and the UNDP Country Programme

11. As seen by the Government, technical cooperation is conceived as a process whereby scientific and technological knowledge is transferred from the more developed countries to the least developed ones. This transfer is a very basic and necessary instrument for the execution and final success of the Five Year Plan which the Government is presently drafting.

12 Unfortunately, the authorities have not been able to design a national technical assistance plan that will complement the National Five Year Development Plan. Nevertheless, it is the objective of the Government in the future to design such a national technical assistance plan that will correspond quite closely to the National Development Plan. In addition, the Government will strengthen the Planning Secretariat, so that through it, all technical assistance will be channeled.

13. It is also the strong belief of the authorities that all international technical aid being received by the public sector should be integrated and coordinated. That process has already begun through close coordination with the CIAP.

14. As seen by the authorities, the UNDP Country Programming is considered quite a convenient instrument since it allows the assignment of fixed sums of money for fixed periods of time which will permit more efficient programming of technical assistance. The Government would very much like to negotiate a system of country programming with all or the majority of the international organizations and bilateral technical assistance groups which provide aid to Bolivia. UNDP's role as the main provider of technical assistance, is a central one. Basically, UNDP's role is directed towards accelerating the development of certain basic economic sectors. However, UNDP's assistance must be complemented by financial assistance from the international financial organizations and the latter needs, at the same time, to take into account the work under way or foreseen by the various technical assistance sources.

../.

18. While a great deal of work has been, and is being carried out in the traditional agricultural areas of the country by almost all external sources of technical and financial assistance, the help of UNDP is still needed, especially to help give orientation and a sense of coordination to the ongoing and future efforts. Thus, while resources within the country programme are sorely reduced, the Government is interested in identifying outside resources that will help it continue and strengthen the work done in the Altiplano through projects like FAO's Improvement of Agricultural Production in the Altiplano and UN's study of underground water resources (mentioned below).

19. But while traditional areas of demographic concentration will continue to require governmental attention and to draw on outside assistance, the national policy calls for the establishment of the possibilities of developing heretofore untouched areas that might be promising in terms of agricultural and other resource development, while at the same time offering escape valves to the growing concentration of population groups in certain areas, by offering new settlement and work opportunities. Thus, the Abapó-Izozog Project now being carried out in the Bolivian Chaco continues to represent a potential development pole which is of utmost interest to the Government and which will continue to call on resources from the IPF for about three more years.

20. Natural Resources.- Efforts to identify and exploit natural resources have been, at best, sporadically carried out in the past. For future development policies and plans, basic information is needed. Because of this, the underground water project in the Altiplano, about to be finished, represents a concerted effort to help the Government learn what the actual availability of water is in this region, knowledge which will form the basis for the establishment of development guidelines for the area. The same type of project is included in the Country Programme for the Alto Valle de Cochabamba, as in this manner the areas of greater demographic concerntration will have been helped to establish the order of magnitude of underground water resources. Such identification of

../.

15. The sectors which require UNDP assistance are as follows:

16. Infrastructure.- This is the sector most in need of strengthening because it is through it that development assistance to all other sectors is channeled and their success will be closely related to the strengthening of the Government planning infrastructure. The Interamerican Bank, the Organization of American States and USAID provide assistance to parts of this sector, but it is felt that the United Nations family is eminently qualified to provide assistance in regional planning, an area that is increasingly requiring attention. Another area in which the international family of agencies has experience which is needed by Bolivia is in the rationalization of foreign trade, mostly in direct relationship to the country's participation in the Andean Sub-regional Common Market. Work in administrative reform was initiated by a United Nations team of experts and the Government requires the continuation of this work in order to complement the needed "package" of proposals that will eventually finish the task of modernizing the national public administration. Work in other aspects of infrastructure represent specialized fields of endeavor, and, in some cases, of ongoing projects of United Nations agencies. These are: reorganization of railways, telecommunications training, meteorology, civil aviation and studies of energy resources.

17. Agriculture.- Because of the nature of the topography and the economy of the country, the larger percentage of UNDP resources has been devoted to agriculture and related fields in the past, and the Government believes it is necessary to continue, for the foreseeable future, to maintain a similar level of resource allocation. While significant assistance is provided to this sector by the financing agencies and bilateral programmes, the technical presence and support of FAO is a must in the scheme of technical assistance planning and its national use. In this context, the assistance which has been given in the field of animal health, is being expanded to also include animal production, thus helping to fill in the gaps which the national drive/faces to turn Bolivia into a livestock or meat exporting country.

../.

resources may open the door for investment in the area of water resource development for irrigation.

21. Equally valuable for the identification of existing but as yet uncovered natural resources is the participation of UNDP in the Government/NASA plan to photograph by satellite a large portion of the country with a view to have exact information on the geographical realities of the country as well as on oil, surface and underground water, mineral and forestry resources and agricultural activities.

22. Awaiting future financing, but of high priority for the Government because of the potential repercussions in the future of the national mining industry, is a mineral exploration project of the North La Paz ranges and slopes. This is very promising area that is almost unexplored because of the difficulty of access, but its exploration might lead to mineral strikes that could change the present, exahusting trend of most mines.

23. Industry.- This sector has received and continues receiving significant assistance from external financing agencies, and the UNDP is being asked to fill in certain existing gaps only. It has financed the construction of an asbestos plant, which will make it possible for the deposits of the Chapare region to be exploited thus aiding in the development of a national asbestos industry and avoiding, at the same time, the expenditure of foreign currency holdings which have been made in the past because of the purchase of asbestos abroad. UNDP will also continue assisting in the development of the ceramics industry and will be called upon to make sorely needed studies connected with the industrial establishment and commercialization opportunities afforded by the country's participation in the Cartagena Agreement.

24. Human Resources.- Relatively small amounts are being devoted, within the Country Programme for the present period, to the sector. While health, education, housing, manpower, etc., represent fields to which the Government attaches high priority, it has not been possible to identify on time those specific areas in which technical

../.

assistance should be applied. National plans in each of them are in the process of being prepared and it is hoped that the experience and technical advice provided through the significant outlays made in the past in some of the sub-sectors, will be taken advantage of in the preparation of such plans. Besides, the assistance provided by USAID, WHO and UNICEF, and foreseen assistance to the educational sector by the IADB, UNDP will continue to finance expert services in ongoing projects in the fields of educational planning, scientific documentation, occupational health, health statistics and epidemiology.

C. Bolivia's need to be given special treatment

25. The above summary of the country's economic and social situation and of the official views as to measures to be taken to attack the problems and develop solutions, represent but a small measure of the factors which affect the economic stability and future of Bolivia. There are additional factors, such as the relatively low level of economic activity of Bolivia as compared to that of her neighbors, the opportunities as well as dangers posed by the country's participation in the Andean Sub-regional Common Market, the problems which the export of any national product faces because of the immensely difficult problems of transportation (given both its mediterranean location and the very difficult terrain within its boundaries) that place Bolivia at a significant disadvantage within Latin America as regards her opportunities for achieving the desired levels of acceptable conditions of life.

26. The difficult position of Bolivia in the above regard is attested by the fact that the United Nations Committee for Development Planning, in identifying the list of twenty "less developed" countries, in document E/4990, while making reference to Latin America in paragraph 71, says the following of this country:

(unofficial translation)

"Within the regional context, it would seem wise to adopt measures to assist the least developed countries. The identification of the countries that should receive such treatment might be based on different criteria from that which is being employed for the general list..... Privileged treatment for Bolivia is justified even more, inasmuch as the gross income per capita of the country is very low....."

27. Because of the above and many other factors, the Government of Bolivia is actively seeking preferential treatment from the various external financial and technical assistance agencies. In the case of the United Nations family, it has requested UNDP to waive the 8% assessment for local costs and is seeking to be given additional assistance under the special treatment efforts being contemplated by that organization for the list of less developed countries.

PART II

INFRASTRUCTURE

Transport

Background

28. The transport network of Bolivia reflects the basic preoccupation of establishing routes to export its minerals. The most important means in this respect is the railway, which has two systems which are not, however, linked. The western system assures the connexion between La Paz and the mining zone and the Pacific ports of Arica and Antofagasta in Chile, and of Mollendo and Matarani, in Peru. The eastern system links the Santa Cruz region with Argentina and Brazil. Railway transportation is the most important in the country and the most strategic because in addition to being the main means of transportation for the export of minerals, at the same time it is used to bring into Bolivia most of its imports.

29. Highways are few and in the mountainous regions they are narrow and extremely winding. Many of these mountain highways, or rather dirt roads, are practically closed during the rainy season. Nevertheless, road transport is increasing the fastest in terms of traffic density, and could in the long run be the most important means of transport if its rate of growth is maintained.

30. River transport is neither easy nor regular and, on the whole, dangerous. There is nevertheless a great potential in this type of transport which should be explored, especially in the important River Plate and Amazon basins. On the other hand, Lake Titicaca on the frontier with Peru, is navigable and is quite important since it assures connexions to two ports on the Pacific Coast.

31. With almost three quarters of the territory without access to alternative means of transport with which to communicate from one region to another, Bolivia must necessarily depend on air transport, which is not always the best solution in terms of cost. The country has 161 air fields, 34 of which are in fairly good condition. The Government controls a mixed company, Lloyd Aéreo

../

Boliviano (LAB), which operates on domestic routes as well as limited international routes. The routes are relatively short on domestic flights. With an average of 300 kms. or less each, the overall operating costs tend to be high.

32. The rate of growth of the transport sector in the 1962-71 period reached 4.8% yearly, indicating that this sector did not keep pace with the rest of the economy which grew at about 5.7% yearly. The behaviour of the railways and air transport was not at all satisfactory. On the other hand, the expansion of road traffic was indeed quite rapid. Lake transport has decreased while river transport has increased. Actually, the lack of financial resources for new investments in this field has been the main bottleneck holding back the growth of the various subsectors. Government agencies are responsible for railway and air transport, and both have very large deficits which are usually covered with transfers from the Central Bank. Foreign credit has always been sought for investment.

33. It is estimated that the transport sector employs approximately 3% of the labour force of the country.

34. At the moment, it is not possible to speak of an integrated Government transport policy. However, it is possible to state what the basic aims are within the subsectors. Regarding railways, the prime objective of the Government is to secure the technical and financial well-being of the National Railway Corporation (ENFE). In the short-run, the following is being sought for the railway subsector:

1. To improve the rolling stock;
2. To ensure an adequate service that will cater to the traffic demands of the future which is supposed to grow by 4.4% in terms of cargo and 3% a year in terms of passengers between 1972-76:
3. To improve the productivity of the railway services; and
4. To attain the economic equilibrium of the railway services.

../

35. These goals were redefined as a consequence of the technical assistance provided by the UNDP/World Bank-executed project which sub-contracted the French company SOFRERAIL to provide technical assistance to the railways.

36. In the field of highway transport, the general long-term objective is the establishment of a solid highway system. The purpose is to assure the integration of the country, to connect the various poles of development, to give support to the establishment of industries, to provide support to the petroleum and mining centres and, at the international level, to ensure integration with the neighbouring countries. Towards this latter end, the Argentine Government is interested in financing a 504 km. paved road between the border town of Aguas Blancas and Potosí.

37. The long-range objectives in the subsector of river transport are to continue with studies to see the possibilities of articulating the Santa Cruz-Corumba railway line with Puerto Busch on the Paraguay River. In this respect, a pre-feasibility study carried out by the IDB indicated that it would be possible to transport initially one million tons of mineral by river a year, and that, with some measure of improvement and investment, up to 1.6 million tons a year would be feasible. This is all related to the iron and manganese deposits in the Mutun region where the possibility of constructing a reduction complex is contemplated.

38. In regard to the maritime transport on Lake Titicaca and on the Pacific, no definite policy is known at the moment.

39. In the field of air transport, no long-range policies have been determined. Yet the principal problems of the LAB are its financial and technical deficiencies. All efforts are primarily geared towards improving these conditions. For the time being, the primary consideration seems to be to construct new airports.

../

UNDF assistance - Ongoing or approved projects

Railways management and organization BOL/71/525 IBRD

40. Because of the importance of maintaining a sound railway system, the Government requested assistance to rationalize the railways. This project became operational in 1971. The UNDP contribution for 1972 is US$ 529.000 mainly for experts and for 1973 US$ 22.000 mainly for residual activities (fellowships). The experts are subcontracted by the Executing Agency, IBRD, from the french firm SOFRERAIL. The main objective of this project is to help reorganize the State railways financially and technically. In this respect, it is worth mentioning that the World Bank has granted an 8 million dollar IDA credit which is helping to finance the railways investment plan which resulted to a large extent from the UNDP technical assistance provided by SOFRERAIL. (A second phase of this project will be discussed below under new projects.) The Government contribution for 1972 was in the order of 458,000 pesos.

Civil Aviation Adviser BOL/68/020 ICAO

41. For 1972 and 1973 the Government requested the extension of the Civil Aviation Adviser post, first approved during the early 1960s. The adviser works directly with the Civil Aviation Directorate of the Ministry of Transport. Several fellowships are included within this technical assistance, whose total for 1972 and 1973 is US$ 78.200, mostly to finance the stay of the expert (US$57,500) and fellowships (US$ 20,700).

42. The Government counterpart contribution is 830,000 pesos, mainly to finance the counterpart of the expert. The extension of this post will be discussed below. In addition, it should be mentioned that Bolivia is receiving assistance in the field of civil aviation telecommunication through the regional project 166. Within the terms of the project, Bolivia will receive high-frequency telecommunication equipment to be installed in various parts of the country.

Cost Accounting and Auditing BOL/70/008 UNOTC

43. The Government requested that this post be extended five months into 1973. The adviser's duties are to help the State airline Lloyd Aéreo Boliviano

../

and the Servicio Nacional de Caminos improve their cost accounting and audit systems. US$ 30,000 were programmed for 1972 and US$ 12,500 for 1973. The Government contribution is in the order of 45,000 pesos.

UNDP assistance - New projects

BOL/72/002 Technical Assistance to ENFE, Phase II - IBRD

44. This project constitutes the second phase of the above-mentioned project in railways assistance (BOL/71/525). The project objectives are to rehabilitate the railways so that they may fulfill their share in the development of the Bolivian economy and on the financial side, cover their full expenses from their own revenues by 1978. The objectives are also closely related to improving the management and operational methods of the personnel so that they will have the required skills for the utilization of the equipment and material to be purchased under the 8 million IDA credit for rolling stock, spare parts and equipment, generally for the improvement of workshops and for the improvement and maintenance of track. The project duration is 22 months as of October 1972. The Executing Agency is IBRD, which has subcontracted the french firm SOFRERAIL, with the UNDP contribution of US$ 990,000, broken down as follows: US$ 150,000 in 1972, US$ 694,000 in 1973 and US$ 146,000 in 1974, mainly to cover the cost of experts subcontracted from the french firm SOFRERAIL. The Government contribution is in the order of 1,352,000 pesos.

Transport Coordination Unit

45. The Government requests an expert in Transport Coordination (12 m/m) and another in Transport Economics (12 m/m) to advise in the definition of a National Transports Policy. The project will have as counterpart the Office of Planning and Coordination of the Ministry of Transport. One of the aims of the national transport policy is finding external financing for the transport sector, particularly the World Bank. Further details will be determined. Tentative starting date is set for sometime during the second semester of 1973.

Civil Aviation

46. As a continuation of assistance in this sector, the Government requests that UNDP contributes US$ 120,000 between 1974-76. Details will be determined.

Other assistance

47. Just as UNDP has until now concentrated on railways and civil aviation in this sector, so too USAID has so far concentrated mainly on road transport. Thus, between 1969 and 1972 USAID has supported the Servicio Nacional de Caminos at a cost of US$ 425,000, for basic planning, design, construction and road maintenance. Similarly, USAID has provided approximately US$ 64 million in loans for road building and 5 million dollars in the form of donations for road building along the main transport routes of the country.

48. The Interamerican Development Bank (IDB) is also cooperating with a cost-benefit study and the final design for the Oruro-Quillacollo road at a cost of US$ 530,000 in 1972. The Bank is assisting with the study of a road system for the Beni area, especially with the Apolo-San Borja road. Where other transport systems are concerned, the IDB has contributed US$ 150,000 to the prefeasibility study for the construction of an ore-shipment harbour in Puerto Busch.

49. The World Bank and BID cooperated for the financing of a natural gas pipe between Santa Cruz and Yacuiba on the Argentine border; for which BID gave a loan of US$ 19 million for the period 1971-73. Finally, between 1968 and 1972, USAID provided 3 million dollars for assistance to Lloyd Aéreo Boliviano (LAB) and 18 m/m of experts to AASANA in order to improve airport facilities, equipment, and train administrative personnel. This, however, does not include the loan for LAB of 9.8 million dollars from the Import-Export Bank for the acquisition of new aeroplanes a Boeing 727, and a Fairchild 27.

INFRASTRUCTURE

Telecommunications and Postal Services

Background

50. The Government recognizes the importance of telecommunications to complete the infrastructure of the country. However, the sector, in spite of its importance, is plagued by various problems. Some of these are the technical deficiencies of the installations, the lack of financial resources to correct them, the lack of able technicians and the lack of a legal system to control its operations. In specific terms, it is often difficult to have an intelligible telephone connexion between La Paz and Oruro, Cochabamba or Santa Cruz. The postal sector also lacks basic legislation to normalize its functioning and is plagued by technical deficiencies due to the lack of adequate mechanization as well as a lack of trained personnel.

Objectives

51. The country has a series of identified projects which make up a national telecommunications plan. In the first place, there is the installation of a microwave system between La Paz, Oruro, Cochabamba and Santa Cruz and another system between La Paz and the Peruvian border. A second project consists of the installation of radio stations in various parts of eastern Bolivia, including the construction of new buildings and the improvement of others.

52. Besides these projects, priority is also given to certain short-term measures within the institutional realm, such as the re-organization of the Directorate-General of Telecommunications, the elaboration of an organic law that will speed up the work of that Directorate-General, the establishment of a unified tariff system and lastly, the development of a National Institute of Telecommunications to train the personnel needed in the sector. These are all of course short-term measures.

53. The medium-term objectives are mainly related to the installation of equipment that will allow the country to have international telex service to Madrid, New York and Rio. The long-term objectives are related to the use of satellites for international communications. In the field of television and

../

radio, the general policy of the Government will be to utilize these means mostly for educational programmes.

54. The main objectives of the postal system policy are basically to improve its efficiency and its uniformity as a service that will cater to the expected rising demand. As a first step, a basic organic law is to be passed for the postal system. The other objectives will be to introduce new techniques and the mechanization of various operations and to ensure a satisfactory administrative and financial structure.

UNDP assistance - Ongoing and/or approved projects

National Telecommunications Training Centre BOL/71/518 ITU

55. One of the development objectives of Bolivia is to assist and strengthen the National Telecommunications Institute. In order to help achieve this goal, the Government requested, and UNDP approved, a two and a half year project with the total UNDP contribution of US$ 724,600. The Government contribution will be the equivalent of US$ 1,508,000. The project will hopefully be fully operational by 1974 and be completed by December 1975. At the moment the project is being delayed because the counterpart building and facilities have not yet been made available. The breakdown of the UNDP contribution is as follows: experts, US$ 405,000; equipment, US$ 250,000; fellowships, US$ 33,000; miscellaneous costs, US$ 37,000.

56. The main objective of this project is to train the staff needed by the national telecommunications company (ENTEL) for its immediate development in the fields of high frequency radio services, telegraphy, telex and microwave. In regard to the latter, it should be mentioned that Bolivia is installing a US$ 20 million microwave system financed through an IDB loan. The microwave system will hopefully be completed by 1973 and should allow for direct communications between Santa Cruz, La Paz, Cochabamba and Copacabana on the Peruvian border.

Telecommunications BOL/68/021 ITU

57. The purpose of this project which ended in 1972, was to provide the services of a general adviser in telecommunications, as well as advisers in

../

frequencies management and tariffs for US$ 52,500. A component for equipment and fellowships was also included for a total UNDP contribution of US$ 67,350. One result of this project was that a frequencies management station was installed with equipment provided by UNDP/ITU.

Other Assistance

58. The main other assistance being given in this field has been provided by the Bank of Interamerican development since 1968. The Bank has collaborated in the first phase of a national telecommunications plan in the following fields: telecommunications legislation, experts in accounting and financial administration, in service training education and technical training abroad. All this was achieved through a loan of US$ 102,000 which will run until 1974. The second phase consists of a US$ 20,000,000 loan for the installation of a microwave system between Copacabana, La Paz, Oruro and Santa Cruz; also of the setting up of a high-frequency radio system in 16 Bolivian towns and for the basic costs of the above, which include engineering, building, and training programmes.

INFRASTRUCTURE

Energy

Background

59. The most important sources of commercial energy in Bolivia are its hydroelectric resources and hydrocarbons, which are controlled by the State. The hydroelectric potential of the country is estimated at about 15 million kw, but its effective use, at the moment, reaches only 2% or less. In energy terms, hydrocarbons are consumed three times more than hydroelectricity. In 1970, the grand total of energy consumption was 1,408.4 tons of petroleum equivalence, almost evenly divided between commercial and non-commercial use.

60. During the 1962-71 period, the income generated by the power sector grew at an annual rate of 9.7% while the GNP grew at 5.7%. One could conclude that the electric sector has expanded in a satisfactory manner without being a bottleneck to the development of the country. However, it should be considered that almost two thirds of the population of the country have practically no electricity services, which in effect explains the low per capita consumption of about 149 kw/hour during the year. This is the lowest in Latin America. The energy sector employs about 0.3% of the labour force of the country.

61. The major consumer of electricity is the mining sector and the consumption of the domestic sector is higher than that of the manufacturing sector. As a result of this consumption structure, the system operates under a low load factor. The rural electrification programmes are just beginning and a large part of these programmes utilize small electric generators that provide minimum quantities of energy with high costs of operation and production.

62. The main problems of the power sector can be summarized as follows:

1. The considerable use of vegetable combustion as a source of energy;
2. The low participation of the manufacturing sector as a consumer;
3. Almost two thirds of the population do not consume electricity;
4. The lack of interconnexions between the principal generating systems.

../

63. Th principal objectives of the energy sector are as follows:

1. To intensify the programmes of rural electrification;
2. To interconnect the northern system with those of the central and southern parts of the country;
3. To intensify the basic studies of energy resources, and
4. To fortify and extend the public service, while at the same time attempting to integrate into it the private or semiprivate generating units.

64. Within these general lines of action, feasibility studies will be carried out to install large steam-powered units supplied with natural gas. Another objective is to ensure a supply of electricity that will cater to a demand which is projected to grow up to almost 5 million kw/hours. To reach this objective, it is believed necessary to have an investment of about 77 million dollars over the next five years.

UNDP Assistance - Ongoing and/or approved projects

Energy Programmer BOL/70/006 UNOTC

65. Under the IPF, the Government is requesting that the above project be extended until December 1973. The expert is providing assistance to the National Electricity Company (ENDE) on studies and recommendations for the interconnexion between the principal generating systems of the country. This work on interconnexions is considered one of the main priorities within the energy field. For this post, US$ 30,000 were earmarked and delivered in 1972 and another US$ 30,000 were requested and approved by the Resident Representative for 1973. The Government's counterpart contribution is 336,000 pesos for 1972 and an equal sum for 1973 to cover mainly the costs of counterpart personnel.

Evaluation of Energy Resources BOL/71/532 UNOTC

66. The Government requested a preparatory assistance mission consisting of one expert from ECLA to help the authorities draft the project document for a study that would determine new sources of hydroelectric energy. This project will be discussed below. The preparatory assistance mission was delivered in December of 1972 at a cost of US$ 600.

../

New Projects

Evaluation of Energy Resources BOL/71/532

67. As mentioned above, the Government requested that UNDP finance a study that will help ENDE determine the various investment possibilities open to them in the field of power generation. The study also contemplates various hydrological technical and economic studies of several new sources of electrical generation between 1980 and the year 2000. The requested UNDP contribution is in the order of US$ 621,390 between 1973 and 1975, for experts (US$ 110,000), trainning (US$ 20,890), equipment (US$ 89,000) and sub-contracts (US$ 401,500). Details are yet to be determined. The main issue at the moment is to decide exactly what types of studies and what levels of UNDP inputs will be requested as well as the interest of the IBRD in this sector. The counterpart agency has set aside 1,818,000 pesos for personnel, 28,000 for equipment and 658,000 for miscellaneous for a total of 2,504,000 pesos. A complementary study to evaluate various hydrographic basins to supply power in the long run (until the year 2000), is being put in the reserve for a cost of US$ 378,610.

Other assistance

68. The Bolivian Government has received considerable assistance in this field, mainly in the form of international credits. USAID has provided a 6.25 million dollar credit and engineers to work on the construction, distribution, transmission and generating systems for the Santa Cruz electricity corporation between the years 1966 to 1972. Since 1964 the World Bank and BID have provided 27.4 million dollars of loans for electrification in Bolivia. A case in point is the BID/IDA loan for the hydroelectric plant of Corani which will provide electricity for Cochabamba, the Catavi mining zone and for the rural population of the Valle Alto of Cochabamba.

69. The Interamerican Development Bank is also cooperating in the construction of electrical systems for Sucre and Potosí, lending assistance to the administration of the National Electricity Corporation (ENDE) and to YPFB, with a loan of 10 million dollars to cover the years 1969-74.

Project Reserve

Evaluation Energy Resources

70. In addition to the above mentioned study to evaluate energy resources, the Government wishes to have a UNDP contribution of US$ 380,000 to carry out another study to focus basically on power supply in the long run (up to the year 2000). Both requests were in fact presented at the same time and the counterpart executing agency Empresa Nacional de Electricidad (ENDE) is ready to implement both studies as the personnel and the funds are available now. This project is given first priority by the Planning Secretariat on the project reserve list.

INFRASTRUCTURE

Meteorology and Hydrology

Background

71. Processed meteorological and hydrological data are a must to enhance the ability of a country to improve the exploitation of its natural resources, for improved agriculture, safer transportation, etc. The Government recognizing this, requested UNDP's assistance to help the National Meteorological Service. This project, executed by WMO, became operational in December 1970. Although no long-term policy is available, it is assumed that the Government will improve and enlarge the operational capacity of its meteorological and hydrological services, through the UNDP/WMO participation.

UNDP assistance - Ongoing and/or approved projects

Improvement of the Meteorological and Hydrological Services BOL/70/526 WMO

72. The main objective of this project which started in late 1970, is to help the authorities establish a National Hydrological and Meteorological Service. The UNDP contribution for 1972, through the second quarter of 1974 when the project is scheduled to end, is to be US$ 569,000, destined mainly for experts (US$ 243,000) and equipment (US$ 273,000). The Government's contribution is approximately 8,489,000 pesos although it should be mentioned that counterpart support has not been strong in this particular field.

Project Reserve

73. If funds become available, a UNDP contribution is sought to start of second phase of the project BOL/70/526. The UNDP contribution is in the order of US$ 631,000 for 1975 and 1976 and US$ 355,000 for 1977. Actual needs, however, will be determined by the progress made with BOL/70/526 which is due to end in June of 1974.

INFRASTRUCTURE

Trade and Commerce

Background

/sector

74. It is clear that the external plays a considerable role within the national economy in view of the fact that foreign trade generated about 38.8% of the gross domestic product in 1971. The principal customers of Bolivia are the U.K., the US., the Federal Republic of Germany and Japan, which buy mainly tin and other minerals. Presently, exports to Latin America consist of 8% of the total, but the country intends to work towards utilizing fully the advantages offered to Bolivia by the regional integration schemes such as LAFTA and the Andean Group. With this in mind and considering the weakness of the institutional structure of the organizations dealing with aspects related to economic integration and export promotion, the Government requested technical assistance to help tackle these problems.

UNDP assistance - Ongoing and/or approved projects

Rationalization of the Foreign Trade Sector BOL/72/011 UNCTAD

75. This project consists of one expert for 12 months and US$ 3,000 for miscellaneous to help the Ministry of Industry and Commerce resolve its major bottlenecks and rationalize the institutional framework of such an important sector as is foreign trade. The Government counterpart contribution is 256,600 pesos mainly to cover the cost of personnel. An expert has not yet been found to fill this post.

Cartagena Agreement BOL/71/007

76. As part of its contribution to the Cartagena agreement, Bolivia has earmarked ten m/m in 1972. As a member of the Cartagena Agreement, Bolivia's future trade and industry are very much tied in to the development and decisions reached by that body.

New Projects

Rationalization of the Foreign Trade Sector BOL/72/011 UNCTAD

77. As an extension of the above-mentioned project BOL/72/011, the Government requests that an additional US$ 269,000 be approved between 1973 and

../

1976 to provide a team of experts that will help out the Government in this area. Details are to be determined mainly because any future developments related to this project will be decided by what is needed in the future and specifically by what will be recommended by the expert attached to the project BOL/72/011.

Cartagena Agreement Board

78. As a continuation of Bolivia's contribution to the Cartagena Agreement, US$ 25,000 for 1973 are being requested by the Government in order to help the authorities reach decisions that will close the gap between the country and its neighbor members of the Board in the all important sector of regional trade and integration. This is a UNDP regional project.

INFRASTRUCTURE

Planning, Administration and Statistics

Background

79. Due to the weakness of the sector, the Government has always had the need to obtain outside assistance in planning, whether it be global, sectorial, regional or physical. Although it is not possible to speak of well-thought out policies, one can say that there is much interest in defining a future regional development policy that will create centres or poles of development in various regions.

80. In the field of public administration, the Government is committed to a programme of administrative reform with the goal of improving the personnel and the institutions.

81. In the general field of statistics, the authorities readily recognize the scarcity of reliable data needed to measure the movement of the economy. The UN has provided an expert for six years in national accounts and statistics, but the results have been meager.

UNDP assistance - Ongoing and/or approved projects

Administrative Reform and Economic Planning BOL/69/008/UN

82. The Government has requested that experts in public administration, systems analysis and personnel administration be continued until December 1973. The advisers work directly with the Administrative Reform unit of the Ministry of Planning. Their work has been more than successful in view of the recent laws and decrees passed in the field of public administration rationalization, which in their preparation received the experts' assistance. The UNDP contribution is US$ 167,800 mainly for experts in 1972 and 1973. The Government's contribution is 3,?60,000 pesos. As it now stands, the project will end in December 1973.

Basic Economic Statistics BOL/68/001 UN

83. Three additional months for 1972 (US$ 7,500) were requested in order for this expert to finish his mission report. His main activity centred around the training of Bolivians in basic economic statistics. The expert first arrived in 1965 and left in March 1972. ./..

Regional Planning BOL/71/010 UN

84. One expert for 12 months (US$ 30,000) and three fellowships (US$ 5,400) were approved by UNDP in the field of regional planning, which is given high priority by the planning authorities in view of the uneven regional development of the country. The UNDP contribution is US$ 35,400 for the 1972-73 period, while the Government's contribution will be in the order of 445,000 pesos mainly for covering the costs of counterpart personnel at the Ministry of Planning. Part of the task of the expert will be to suggest future technical assistance needs of the Planning Secretariat in this field (see below) with a view towards extending the project.

Development Planning BOL/72/001 UN

85. A UN expert was requested by the office of the Resident Representative to help draft the Background Paper for Bolivia. He arrived in Bolivia in early 1972 and remained for one month (US$ 2,500).

New projects

Regional Planning BOL/71/010 UN

86. As a continuation of the above project BOL/71/010, the Government requests that additional experts be contributed by UNDP between 1973 and 1976. Teams of regional planners may be formed and sent to assist directly the various regional development corporations of the country to help these formulate development plans and identify bankable projects. Experts are requested in the areas of statistics, regional analysis, regional programming, economic geography sociology, industrial planning, etc., for a total of UJ$ 578,000; fellowships (US$ 50,000) and equipment (15,000) will also be requested. The Government's counterpart contribution will be determined.

Administrative Reform BOL/69/009 UN

87. As an extension of this approved project, the Government requests that the following posts be extended into 1974: Team Leader until November 1974; Personnel Administration until February 1974; Systems Analyst until May 1974.

./..

Other assistance

88. In this field, the Bolivian Government is receiving considerable quantities of small scale technical assistance from other multilateral and bilateral sources. For example, USAID has a project due to run from 1967 to 1975, according to the terms of which it is providing US$ 842,000 of technical assistance to the Ministry of Finance for the improvement of its financial administration and for work on fiscal reform. Within this framework, 165 expert/months are being provided. Linked to this project is another tax administration project costing US$ 566,000 and for which 188 months of expert time are provided. The objective of this project is to help the Ministry of Finance in improving the control of tax payments and improving methods within its organization. USAID also provided 238,000 dollars from 1967 to 1972 for the development of ISAP, that is, the Instituto Superior de Administración Pública, with 63 months/expert. ISAP is being used for the training of Government officials.

89. OAS, whose speciality is technical assistance for public administration, has provided a considerable number of experts in this field. Recently, OAS experts have worked both in the Tax Administration and with ISAP.

90. Finally, other governments are giving assistance for regional planning. The German Government is providing 4 planning experts to advise in the regional development of Santa Cruz between 1970 and 1973; and six economists and agronomists to prepare regional development plans for the Caupolicán and Iturralde provinces from 1971 to 1972.

91. Italy, in the past, provided similar help. In 1967, two experts made a general plan for the development of the Cochabamba region; and in 1970 an expert made a plan for agricultural development of the same area.

92. The Interamerican Development Bank (IDB) provided US$ 30,000 for a study on the possible economic integration of the north of Argentina with the southern departments of Bolivia. It also financed a subcontract for the study of the legal problems of changing the Santa Cruz Public Works Committee into a Development Corporation.

93. Finally, the German Government has provided from 1970-72 an adviser to the Central Bank to collaborate in the promotion of exports and in the solution of industrialization problems.

AGRICULTURE

Background

94. The most outstanding characteristic of the agricultural sector is its low productivity. About 67.7% of the labour force seeks a livehood in this sector, which only generates approximately 17.6% of the GNP. It has been estimated that the productivity of the urban sector is 5.7 times greater than that of the rural sector. The income per capita of the rural population is a little over 50 dollars a year, but the income for Bolivia is about 205 dollars.

95. In Bolivia there exists a very low ratio of population to land but a very high demographic pressure over the traditional cultivated lands of the Altiplano and valleys, which explains the low technological level reached in these areas. The efforts to solve the demographic pressure in these areas through a programme of moving people to the Oriental part of the country has met with great difficulties due (1) to the high cost of settling families in colonization areas, (2) to the lack of needed investments for infrastructure and services and (3) to the lack of a market for many tropical products.

96. In the oriental part of the country, there are two types of land use: one is the very large extensive type and the other is the typical minifundio. The opening up of new lands in the Oriente has brought with it a change in the structure of agricultural production. At the beginning of the 1960s, corn, potatoes and barley represented about 54% of the agricultural production, while with the increase in the cultivation of tropical agricultural products, their relative importance has been reduced to about 48% in 1968.

97. Labour productivity in agriculture also tends to vary greatly. In Oruro and Potosi it is 564 and 784 pesos per annum respectively due to the serious erosion that is taking place. In Cochabamba it is about 2,000 pesos and in Santa Cruz, it reaches 4,100 pesos per annum. The low productivity registered in the traditional areas of the Altiplano does not allow for any surpluses for export.

98. During the 1962-71 period, the GNP of the agricultural sector grew by only 2.9%. Agricultural imports reached a total of 26.9 million dollars in 1968, while the level of export hardly reached 6.6 million dollars.

../

99. This is a paradoxical situation for a country that has sufficient land and all types of climates to produce a wide range of agricultural commodities. Bolivian agriculture does not provide an acceptable diet to its own workers. Besides, there is much underemployment in the countryside. Finally, with few exceptions, agricultural production is not organized in order to become an adequate support for the establishment of an agro-industrial sector.

Livestock

100. The livestock sector consists principally of cattle, pork and sheep. There are presently 2,500,000 head of cattle in the country which is quite unsatisfactory when one considers that in the Beni region alone 15 million head of cattle can be maintained with the present pastures. Likewise, the productivity index for the meat industry is quite deficient due to the low level of management techniques as well as inadequate assistance to the animal health and marketing sectors. The annual increase in the production of meat was in the order of 5% whereas the increase in the annual consumption fluctuated between 3.25% and 3.50% allowing only for some small surpluses for export. However, the per capita consumption of meat varied between 8 and 12 kilos per year - a level which is quite below the minimum requirements of 20 kilos per capita. The population of milk cows reached approximately 20,000 head, with a production of 26.2 million litres, while the minimum consumption recommended for the country was estimated at about 736 million litres. This means that the per capita consumption of milk products should be around 150 litres per person a year whereas the figures reached were only about one fifteenth of this.

Agriculture

101. During the last decade, the cultivated area for most of the important crops increased. It was 751,000 hectares in 1961 and gradually reached 832,000 in 1971. The largest increase corresponds to cotton which in the last two years went from 17,500 hectares to 48,000 hectares. Yet, the small plots of land, the ecological conditions, the traditional technology, the lack of modern management techniques in the use of soil and its conservation were the principal factors in bringing about a low level of productivity for the sector. A case in point is the low yield of sugar cane which went from about 60 metric tons to 38 metric tons per hectare as a result of inadequate soil conservation

../

techniques and investments. Some crops, however, show increasing yields per hectare such as wheat, rice and potatoes, even though these are still at low levels by international standards. Furthermore, the incorporation of new lands in the Eastern part of the country produced a shift in agricultural production patterns, creating a new so-called non-traditional sector characterized by the cultivation of commodities destined principally for industrial use as well as for export. This sector, however, did not acquire sufficient impetus to produce the necessary surpluses for exports (except for cotton) nor for significant industrial production.

Forestry

102. An estimated 47 million hectares, which comprise 43 per cent of the country's total area, are covered by natural forests which are primarily concentrated in the eastern plain. However, until now the exploitation of these resources has been limited and disorganized thereby rendering forestry's contribution to the agricultural sector to be insignificant, varying from 1 to 3 per cent of the total gross agricultural product. Forestry development in Bolivia is, therefore, in a relatively incipient phase.

Game and Fish

103. Many species of animals are close to extinction due to large-scale commercial exploitation. Many species have been exterminated while others are at a critical point in their survival. The hunting of wild animals to obtain their hide has increased during the last few years due to the demand from countries like Argentina, the USA and of course Europe. For example, due to the heretofore unrestricted hunt of tigers and other felines, a ban has been put on the commercialization of their hides for a period of 5 years due to the almost extermination of the species.

104. The fishing industry in Bolivia is based particularly on trout and on a variety of mackerel, although the rivers and lakes of the oriental part of the country possess a great variety of other fish. Lake Titicaca constitutes one of the richest and most important sources of fish due to its extension as well as its nearness to the principal markets of the country.

105. Lake Uru-Uro, south of Oruro, is another rich sources of fish, particularly a wide variety of mackerel. Data gathered by the Ministry of Planning

../

indicates that an average 870 metric tons a year are caught from the Lake for a total value of about 145,000 dollars. In relation to specific aspects of fish conservation, the need for basic studies is given priority by the Ministry of Planning in order to rationalize the exploitation of the fishing resources of the country. This need is emphasized due to the lack of any concrete programme in this field as well as the lack of an administration to oversee the exploitation of these resources.

Policies

106. According to the documents presented by the Planning Secretariat, the agricultural sector should seek to produce surpluses that will sustain the development of other economic sectors. In order to accomplish this, the long-range general objectives are to provide general employment in this sector, to stabilize and rationalize producer prices, to expand the production and to improve the sector's trade balance. Although not indicated in the document, it must be assumed that an integral part of these objective will be to increase the income level of the campesino so that he may be helped to solve some of the urgent problems such as low nutrition levels, illiteracy and the migration to the cities. Another result of this policy should be to liberate the country from its external dependence, to increase the participation of the peasant masses in the creation of the national product and to raise the level of productivity in this sector which will contribute to the social, political and economic integration of the country.

107. In concrete terms, the long-range objectives of agriculture can be summarized as follows:

To increase the level of production;

To improve the standard of living of the rural population;

To improve the land/farmer relationship in the traditional areas;

To increase and diversify agricultural production;

To modernize agriculture so that it will attract investments;

To extend to the rural population educational services, health, electric power, potable water, technical assistance, etc. at low cost;

To create an institutional structure within the public sector capable of centralizing the decisions relating to agricultural policy and development and to improve its implementation;

To make it possible for the agricultural sector to improve the income level of farmers.

../

UNDP assistance - Ongoing and/or approved projects

Feasibility Study and Demonstration of Agro-Industrial Development in the Abapo-Izozog Region BOL/69/516 FAO

108. The project became operational in August 1970 with an initial UNDP contribution of US$ 1,653,700 and a Government contribution of US$ 1,246,868 for four years. The main objectives of this project are to identify the agro-industrial potential of this area in south-eastern Bolivia through a general study of its resources and a programme of experimentation and demonstration. So far, the tests conducted indicate that the area could provide work and home for thousands of families and become a pole of agro-industrial development. The project is expected to run until the middle of 1976, with a total UNDP contribution for the programme period of US$ 2,582,000.

Animal Health Programme BOL/68/519 -BOL/72/007 FAO

109. One of the most promising sectors for intensive development in Bolivia is livestock production and one of the major problems to be solved is animal health. This project started in 1968 with an UNDP allocation of US$ 945,000 for four years. The Government contribution was earmarked at US$ 1,770,000. The main objectives of the project were to help set up a veterinary service to identify animal diseases in Bolivia and to manufacture animal vaccine within the country.

110. The counterpart financial and administrative difficulties made it necessary to terminate the project and to replace it with a smaller one. US$ 448,000 are earmarked between 1972 and 1974. A new project covering both animal health and production aspects should follow this large scale effort. The Government's contribution for this effort to conclude during the first quarter of 1974, is 3,548,000 pesos.

Improvement of Agricultural Production in the Altiplano BOL/68/521 FAO

111. The precarious situation of the campesinos in the Altiplano, due mainly to the climate, altitude, lack of water and the minifundia problem, has been a constant preoccupation of the authorities. In order to seek solutions, the Government requested and UNDP approved this Special Fund-type project which became operational in August 1969. The UNDP contribution was earmarked at

./..

US$ 1,001,700 and the Government's contribution was US$ 490,000. An amendment at a later date increased the UNDP contribution by US$ 52,000.

112. The main objective was to identify the best possible technical and organizational set-up that would provide campesino cooperatives with the greatest possible help to improve their productivity and hence their living conditions. So far, work has been done in the fields of cooperatives and credit, soils, agronomy, forestry, livestock and grasses, rural administration. In 1972, US$ 466,000 will be spent chargeable to the IPF and US$ 173,000 in 1973. The Government's contribution will be 549,000 pesos.

113. At the same time, however, that expenditures out of the IPF for Altiplano development contemplate a phasing out, the Government desires to increase the external technical and financial assistance to be directed towards finding adequate and far-reaching solutions to the problem of improving the living conditions in the Altiplano. Cognizant of the fact that many experiments and programmes have been carried out in an isolated fashion in the past, it is now actively seeking to achieve a significant degree of coordination of governmental and outside efforts in order to mount a large-scale effort of sufficient duration to finally identify the actual development possibilities of the area and to move in the direction of reaching the newly identied goals in an integrated fashion. In order to give support to such an effort, UNDP has been working to locate additional (non-UNDP) resources that might be brought to bear in order to give sense and structure to the Government's policy of tying together most of the ongoing programmes in the Altiplano. In this fashion, even though the actual IPF resources as such devoted to this area may be small, the impact of the support given by UNDP to the coordinated effort will have more far-reaching effects than the actual cash value of its contribution.

New Projects

Animal Production and Health BOL/72/012 FAO

114. One of the Government's hopes for increasing foreign earnings lies in the rapid and organized development of the livestock industry. Several efforts are underway in this connexion, most notable being the loans made by the World Bank and the Interamerican Development Bank to Beni and Santa Cruz cattlemen, which together total almost twenty million dollars.

./..

115. It has lately been recognized that the reaching of the Government's goal in this sector will call for coordinated action on the part of the various participating national and international or bilateral agencies. In the effort to identify the various tasks that require attention and to divide them among the agencies and programmes that are best equipped to perform in areas such as credit, animal production, animal health, pastures, ranch management, commercialization, transportation, sanitary measures, etc., the Government has asked aUNDP to carry out, under the technical direction of FAO, an Animal Production and Health project. This project would begin early in 1974 and would last for four years. US$ 683,000 would be devoted to it out of the IPF for the 1974-76 period, and the Government's contribution for the same period will be 3.6 million pesos.

Feasibility Study and Demonstration of Agro-Industrial Development in the Abapo-Izozog Region BOL/69/516 FAO

116. As a continuation of the activities of this project, an additional allocation of US$ 500,000 is planned for 1974 to 1976. Details will be determined.

Other assistance

117. It is in this sector that most of the assistance being provided to Bolivia both by UNDP and other multilateral and bilateral agencies is being given and in which any attempted national coordination of such assistance are most likely to be successful in the short run. For instance, two multilateral development agencies - IDA and IDB - are providing assistance to the livestock field. Tentative moves have already been made to coordinate these with the UNDP livestock programme. First, since 1967 IDA has provided 10.2 million dollars for the increase of livestock production in the Beni and of sheep production in the Altiplano. This project includes the construction of slaughter houses and collaboration with the Government for the establishment of a suitable system for inspection, marketing and price contols. The aim of this project as with other livestock programmes is that Bolivia should establish itself as an exporter of meat to neighbouring countries.

118. Next, the Interamerican Development Bank is financing a livestock project in Santa Cruz and in the Chaco of US$ 987,000 dollars for the years 1970-75. It is also giving technical assistance to the Banco Agrícola de Bolivia, which is executing the project, with a back-up loan of US$ 5 million. The above IDA programme is roughtly comparable to that being carried out with USAID assistance, which is a 1.5 million dollars integrated development of sheep farming programme, which will cover every aspect of sheep farming, from production through marketing to further investment.

119. Since 1970 USAID has also provided 1.1 million dollars for an integrated wheat programme. The approach here is above all institutional, in that it involves the improvement in efficiency, and the training of Bolivian technicians to manage an increase of wheat production in the medium term. This programme should end in 1974. Over and above this, USAID has also provided 8 million dollars to the Government with the aim of strengthening agricultural field services. Another 7.5 million dollars have been provided to help the Government to give loans to corporation, firms, institutions and farmers in Bolivia with a view to improving production, storage and marketing within the agricultural sector, laying special stress on the increase of production of those products which Bolivia is at present obliged to import. The USAID programme by itself is the largest single bilateral assistance programme in the country; however,

./..

other programmes are worthy of mention. The Swiss Government for instance, is concentrating all its assistance in the agro-industrial field and for a period of ten years, at a cost of approximately 2 million dollars. At the moment this assistance consists of a livestock project in Reyes (Beni) and of a large-scale project in livestock pastures in La Tamborada, Cochabamba. Similarly, they are carrying out a three-year project in olive cultivation in Mizque, and finally, a two-year livestock project in Belén.

120. From 1962 until recently, the United Kingdom has maintained a Tropical Agriculture Mission in the Oriente. This mission works above all in sugar cane cultivation, livestock and soil investigation. It is now thought that the UK will be sending another mission to the Oriente to work in livestock; and there would be of course a possibility of coordinating this with further UN work in this field.

121. Among other countries sending experts to Bolivia to work in agronomy and agriculture, one could cite Nationalist China, Japan and Israel. Finally, Argentina is financing the construction of refrigerating plants in Santa Cruz and Trinidad, with a loan of 3 million dollars.

NATURAL RESOURCES

Mining, metallurgy and groundwater

Background Data

122. The mining sector, excluding hydrocarbons, generates approximately 10% of the GNP and employs about 3% of the labour force. Minerals represent approximately 82 to 85% of the country's total exports. It is also estimated that approximately 300,000 persons are directly linked to the mining activities.

123. The mining sector is traditionally dependent on outside markets but the mineral as such hardly undergoes any processing within the country.

124. Tin ore is the principal mineral, representing about 50% of the exports. This gives the country the typical characteristic of a one-product exporter with all the related economic difficulties due to the price fluctuations in the world market.

125. Other metals produced are antimony, zinc, lead, copper, wolfram, silver, bismuth and, on a lesser scale, iron and gold. Non-metallic minerals are sulphur, asbestos and magnesite. There is presently the possibility of large-scale production of iron, nickel, aluminum, cadmium, vanadium and radioactive minerals.

126. Approximately 50% of the mineral production is nationalized and under the control of the State Mining Corporation (COMIBOL).

127. The principal problem of the mining sector is the low level of metal processing carried out in the country as well as the great level of dependency upon one metal: tin. This should also be seen in terms of the relatively low diversification level within the entire mining sector as a whole. Nevertheless, one could point out to a slight tendency towards diversification in the mining sector. For example, in 1965, the exports of tin represented 79% of the total exports of the mining sector and 75% of the overall exports. In 1971, these

../

percentages were 61 and 52% respectively. Some of the metals which have experienced high rates of exports are for example lead, copper, wolfram and zinc. Particularly this last metal experienced a 231% increase since 1965 compared to a 24% increase in the exports of tin in the same period. Other problems encountered within the mining sector is the low level of technology which influences the low levels of mineral recuperation.

128. The problems encountered by COMIBOL, the largest mineral producer, are the following: (a) obsolete equipment; (b) high rate of disguised unemployment with the attendant low return in productivity; (c) the inability of the company to invest in new equipment.

129. Short-range policies within the mining sector will tend to increase and diversify the production of minerals and to obtain a higher level of mineral transformation to carry out these objectives. Some of the principal activities proposed are the geological and mineral prospections of the areas of Lipez, principally involving copper, bismuth, lead and silver; prospections are also being carried out in Mutún with great possibilities of the commercialization of iron and manganese. Another objective is to promote the technical rationalization of COMIBOL, in order to obtain a higher rate of mineral production. Another key objective is to obtain a higher rate of transformation of minerals in the country which will require basically the installation and operation of new foundries and refineries (only one exists at present). One of the projects being considered outside of the traditional mining sector is the establishment of an iron-treatment plant utilizing the Mutún production. Other projects being considered are the establishment of several foundries for bismuth, zinc, antimony. The policies of the Government directed towards the private mining sector are as follows: reduction of import taxes, extension of credits to small miners, the establishment of concentration and beneficiation plants.

130. Groundwater development takes place mainly in the Cochabamba and Santa Cruz areas for municipal purposes. In the Altiplano, there exist plans for use of groundwater for irrigation purposes as well as in the Cochabamba and Santa Cruz areas. However, it should be mentioned that the potential for groundwater development is probably better in the Santa Cruz region because of higher rainfall and because of recharge from various streamings from the Cordillera.

131. Although the sector as a whole carries great priority in the projections of the Government within this present country programme, a relatively small amount is given to it because most of the funds are committed to ongoing projects and to extensions.

Ongoing and/or approved projects

Groundwater Development in the Altiplano BOL/68/514 UNOTC

132. One of the main impediments to better living conditions of the Altiplano campesino is the scarcity of water. With this in mind, the Government requested the above project which became operational in 1969. A UNDP contribution was US$ 1,467,000 and the Government contribution was US$ 1,170,100. The main objectives of the project are to evaluate the underground water resources and to show its practical use. Besides that, the project was to advise on the establishment of the National Water Authority and Law. The investigations to date indicate that the groundwater resources of the Northern Altiplano offer an opportunity for limited agricultural development and water supply uses. For 1972, it is expected that the project will use US$ 588,000 and for 1973 about US$ 30,000 chargeable to the IPF. The Government's contribution is about 5,336,000 pesos. This project should end during the first semester of 1973 and transfer its operations thereafter to the Cochabamba area. What has been established until now will help decide on a Water Development and Use Policy; also a number of experiments in irrigation are under way using wells and the results are so encouraging that the much larger integral development effort in a larger area of the Altiplano is under consideration to be carried out by national, international agencies and several bilateral programmes.

Mining and Metallurgical Research Institute, Oruro BOL/70/015 UNOTC

133. This project was first approved in 1965 under the Special Fund and its activities ended in early 1970. The total UNDP contribution during this period was US$ 813,000 while the Government's contribution was about US$ 1,800,000. The main objective of this project was to establish a scientific institution able to carry out basic investigation and training of nationals in the recuperation of various metals, mainly tin, which would eventually aid in the setting up of metallurgical industries, thus lessening the country dependence on the export of raw materials. Once the SF project ended, UNDP approved an extension for the

../

project. In this way, for 1972 and 1973, US$ 38,850 have been approved for personnel and approximately an additional US$ 9,000 for training, equipment and miscellaneous. (For the 1973-76 period, additional assistance is being requested to be discussed below.) The Government's contribution during this period is in the order of 897,000 pesos.

Development of the Mutun Iron Ores BOL/70/527 UNOTC

134. This project first approved in January 1970 became operational in January 1972. UNDP's contribution of US$ 357,000 is mainly for equipment and experts. The Government contribution is estimated at about US$ 445,000. The main objective is to help determine the quantity and quality of iron and manganese ores in the Mutun area which if possible will help lessen the country dependence on one metal, tin. A feasibility study for commercialization of the ores is also included. For 1972-73 the UNDP contribution will be US$ 344,000 mainly for equipment (US$ 219,000) and experts (US$ 85,000). The project should end in June of 1973. Follow-up investment of about 150 million dollars will be needed if the quantities and qualities of the ore warrant the establishment of a steel production complex.

Mineralogy BOL/71/002 UNOTC

135. One expert for two months was requested by the State Geological Service (GEOBOL). The expert was in Bolivia early in 1972 and his principal task was to train GEOBOL personnel in the use of X-ray diffraction equipment and a spectrograph. US$ 5,000 was the UNDP contribution and 336,000 pesos that of the counterpart agency.

Bismuth and Antimony Compounds Market Survey UNCTAD

136. Bolivia is tha number two producer of antimony and bismuth concentrates in the western world. As such, the authorities would like to start exporting antimony and bismuth compounds and products. The Government requested UNDP to finance a US$ 13,500 market study of antimony and bismuth compounds in the USA, Japan and Europe. The study will be done by UNCTAD. It will last five months and start in October 1972.

../

Fellowship for the observation and study of smelting plants BOL/73/001 OTC

137. A one month fellowship was requested for the technical director of the State Foundry Corporation (ENAF): the purpose of this fellowship is to allow the technical director travel to the Soviet Union and Finland and observe the latest advances and innovations in various foundries in those countries. The fellowship is for one month and the UNDP contribution is US$ 1,450.

New Projects

Mining and Metallurgical Research Institute, Oruro

138. As an extension of the project BOL/70/015, the Government is requesting UNDP assistance in the order of US$ 128,000 for experts between the 1973-76 period. The Government's counterpart contribution is to be determined and whether assistance is provided will be decided by the type of financial help that the Institute receives from the Treasury.

Hydrologic Study Valle Alto, Cochabamba

139. The Cochabamba upper valley is one of the areas of greatest demographic concentration where the problems of economic survival hinge on the potential availability of water, thus the Government is attaching great priority to a study whose objective it is to make a survey of the hidrologic resources of this heavily populated and important agrcultural region. The UNDP requested contribution is US$ 411,000 mainly for experts (US$ 170,000) and equipment. In this respect, it should be mentioned that quite a large part of the equipment previously used in the Underground Water development in the Altiplano project will be transferred to this project. The UNDP commitment is just to determine the order of magnitude of the underground water resources in order to indicate whether a water development project might be proposed for financial support from and institution. The Government counterpart contribution is to be determined as well as the other detailed information which is not presently available. Project duration will be fourteen months and the Government counterpart agency will be the State Geological Service (GEOBOL). The project should start sometime during the second semester of 1973.

../

Technical Assistance to the Mining Industry

140. The importance which the mining industry plays in the national economy has been described elsewhere. Suffice it here to say that it is inconceivable, in economic, social and political terms, to speak of Bolivian development without giving mining a most prominent attention. Precisely because of its size and importance, the assistance which can be provided by the United Nations family has to be carefully foreseen in relation to the financial and other assistance which is to be provided this sector. As the inputs needed are of necessity very large, the national planning authorities would like to receive UNDP financing to provide expert guidance in the establishment of guidelines and policies for the needed and sought after growth of the mining sector. This assistance will be provided from 1973 through 1976. While it is not possible to have accurate figures as to future investments in the whole industry resulting directly from this assistance, it is worth noting that negotiations are under way between COMIBOL, the state-mining enterprise and private sources for a one hundred million dollar loan for development of segments of the industry. The World Bank has expressed interest in giving support to various aspects of the industry that would relate to the strengthening of its infrastructure through a possible loan of eighteen million dollars. In view of the above, the Government is setting aside out of the IPF, US$ 150,000 for assistance to COMIBOL. The exact number of advisers and the type of assistance is to be determined. The Government counterpart contribution will be about 1,446,000 pesos.

Natural Resources Inventory

141. While it is generally accepted that Bolivia is immensely wealthy in terms of many natural resources, actually rather little is known about them, mostly because of the unbelievably difficult terrain, the very few means of transportation, the lack of funds and proper equipment and the insufficient availability of trained manpower. Studies have been made through the years, but they have for the most part been considered insufficient or inaccurate, mostly because of the problems mentioned above.

142. The Earth Resources Technology Satellite programme sponsored by NASA (USA) promises to change this situation. It is now photographing a goodly part of Bolivia, and the interpretation of its photographs is going to allow for

../

accurate mapping to be made and for the identification of resources to be compiled in at least the fields of minerals, hydrocarbons, forestry, hydrology and the identification of areas of agricultural concentration, potential land use, etc.

143. In order to take advantage of this possibility, and besides the investment which the Government will be making in this programme, UNDP has been asked to make a contribution of $150,000 ($100,000 in 1973 and $50,000 in 1974) to assist GEOBOL (Servicio Geológico de Bolivia) the counterpart agency, in securing high level technicians to assist in the interpretation of the photographs for the various sectors mentioned above and to train Bolivian technicians in photo-interpretation. The necessary equipment to carry out this scientific endeavor will also be provided. The Government's contribution to the programme in 1973 and 1974 will be $ 2,624,000 (pesos bolivianos).

Radioactive Minerals Prospection IAEA

144. Early in 1971 an IAEA/UNDP project made positive findings of uranium in Bolivia. Given the needs of the country to diversify its production, the Government is requesting further aid and in this field consisting of one geologist for six months and equipment (a drilling rig, vehicles, etc.) at a total cost to UNDP of US$ 39,000. The project will start and end in 1973. The counterpart contribution will be 873,000 pesos.

Mining and Metallurgic sector

Other assistance

145. The mining and metallurgical sector has benefited above all from two very large international credits. The first, called the Triangular Plan, between the Federal Republic of Germany, the BID, and USAID, consisted of a 45 million dollars credit plus technical assistance for COMIBOL to streamline its operations and improve its capital equipment. Besides this, the Federal Republic and USAID gave credits to the Banco Industrial of 1.5 million and 2.3 million dollars respectively. More recently the USSR has authorized a credit of 27.5 million dollars for the years 1970-73; this includes the supply of Russian machinery and equipment to Bolivia. Above all, in the mining field Russian experts are at present doing a pre-feasibility study for the construction of a zinc plant and a horno de volatilización in Potosí. Much of the

../

other assistance has consisted of equipment credits for mineral treatment, mainly from eastern European countries.

146. In 1972 the British Government provided a 2.4 million dollar credit for COMIBOL for the acquisition of British mining equipment.

147. The Japanese Government, between 1969 and 1971, provided GEOBOL (Servicio Geológico de Bolivia) with two experts, one to work on the testing of samples and the other to assist in the installation of an X-ray spectrometer which had just been supplied to GEOBOL.

148. Finally, the German Government has given 7.2 million dollars credit to build the first phase of a tin smelter in Vinto (near Oruro).

Project reserve

149. As it stands now, Bolivia's known mineral reserves will be exhausted within the next five years. Thus, massive amounts of capital will be needed to explore new regions of the country in search of mineral reserves. While the Government seeks to obtain funds from other sources to tackle this problem, the authorities request US$ 1,500,000 from UNDP in order to start a mineral prospection project lasting three years. The project will get underway as soon as funds become available. Other details will be determined. It should be mentioned that if UNDP's involvement in this critical situation is minimal, it is seen by the authorities as important since it is hoped that UNDP will act as a catalyst in order to attract larger sources of funds.

Development of Natural Resources

150. The Government requests that UNDP allocate US$ 1,500,000 to help in various projects to develop the natural resources of Bolivia; project details will be discussed when the likelihood of additional financing becomes a closer reality.

NATURAL RESOURCES

ydrocarbons

Background Data

151. Since the nationalization of the Bolivian Gulf Oil Co. in October 1969, the State Petroleum Co. (Yacimientos Petrolíferos Fiscales Bolivianos, YPFB) has had a total monopoly of the exploration, exploitation, refining, transport and commercialization of hydrocarbon products and its derivatives. The nationalization of the Gulf Oil Co. and the attendant indemnization payments have had the effect of reducing funds that might have gone into capital investment. During 1965-71 period, the production of this sector increased by more than 300%, going from 533,156 cubic metres to 2,137,800 cubic metres.

152. The exports of the hydrocarbons sector represented in 1971 11.8% of total exports, with a value of US$ 24,000,000. Of these, approximately US$ 12,000,000 were exported through the Pacific Coast and about US$ 11,800,000 were exported to Argentina. Still various hydrocarbon products are being imported, such as aviation fuels, asphalts and lubricant bases for a yearly value of US$ 1,500,000 approximately.

153. The actual refining capacity of YPFB is about 23,700 barrels a day distributed in seven refineries. The main ones are in Cochabamba (14,000 barrels), Sucre (4,000 barrels) and Santa Cruz (3,000 barrels).

154. The main products obtained by the distillation of crude oil are: gasoline, representing about 44%, kerosene 17%, diesel oil 13%, fuel oil 20% and lubricants 2.5%. During the 1965-71 period, hydrocarbons contributed 245,000,000 pesos to the GNP in the first year and 636,000,000 pesos in the latter year. This represents a sectorial participation in the GNP of 3% in 1965 and 5.4% in 1971.

Main difficulties encountered in the hydrocarbons sector

155. The main obstacles to remove are:

1. Institutional, which revolve mainly around the needed modernization of YPFB in order to obtain higher rates of productivity. In order to reach this, better financial and personnel management

./..

will be needed. At the same time, better coordination will have to be maintained with the public institutions in charge of formulating the policy of the hydrocarbons sector, such as the Ministry of Energy and Hydrocarbons;

2. Its exploratory capacity is adversely affected by the financial condition of the company. This is basically due to the inability of the company to obtain sufficient external financing;
3. Obsolete equipment. The exploratory needs of the company are affected by obsolete equipment which is not being renewed, again due to the financial situation of the company. At the international level, the company has not been able to obtain financing for equipment, although some technical assistance has been obtained;
4. High employment. YPFB employs many people who are not directly related to productivity nor to the relationship between technicians and workers. An administrative and technical rationalization of the company will also have to be accompanied by the rationalization of the labour force;
5. Legislative and institutional aspects will have to be made compatible with the monopolistic situation in the hydrocarbons sector. The Government will need to simplify and rationalize this institutional situation. Equally, the Government will have to establish incentives for investment in projects within this sector.

Development policies for the hydrocarbons sector

156. The following are necessary features in the establishment of a national hydrocarbons policy:

1. To refine hydrocarbons with more advanced technologies and to supply the increasing internal demand with products of high quality;
2. To encourage exploration and exploitation of new reserves. This would include the intensification of exploratory activities in the Sub-Andean region and in the Chaco-Beni and to give priority to certain geological structures in the Altiplano;
3. To industrialize by introducing more modern technologies into the hydrocarbons sector and its derivatives and to harmonize this

./..

with basic chemical industry in the country, keeping always in mind the possibilities offered by the Sub-Andean region;

4. To supply the national market with cheap industrial energy through the availability of natural gas, to rationalize the exports of petroleum and gas always keeping a rational relationship between reserves and production; to relate YPFB financially with foreign state companies in order to carry out multinational projects; to improve the institutional situation of YPFB; to improve the productivity of the employees of YPFB through specialized training of the labour force thus reducing the unjustified increment in the number of personnel.

UNDP assistance - ongoing and/or approved projects - Hydrocarbons

Centre for Petroleum Development BOL/65/510 UNOTC

157. This project was started in 1966 with an original three-year UNDP contribution of US$ 944,900. Through various amendments, the project will be continued through 1973 with a total UNDP contribution of US$ 1,216,793. The Government contribution will have increased to US$ 1,765,000. The main objective of this project is to help YPFB increase its production through the demonstration of the latest technology in the exploration and research of petroleum and gas. The main UNDP expenditures were for experts (US$ 252,389), subcontracts (473,745) and equipment (399,079). For continued assistance to the Centre, US$ 145,000 are earmarked for 1972 and US$ 102,000 for 1973, mainly for experts (128,000), consultants (23,817), fellowships (26,900) and equipment (64,900). Activities should come to an end in December 1973 although an extension is foreseen. The Government contribution is 23,600,000 pesos.

New Projects

Centre for Petroleum Development

158. As an extension of this project, the Government requests that UNDP maintains the presence of the centre in order that the newest and latest techniques are introduced through experts and/or consultants. For this purpose, US$ 30,000 are being requested between 1974-75. The fact that Bolivia is at this very moment starting exploration in new areas of the country, principally on the

./..

Altiplano, justifies this assistance. The Government's contribution for the entire 1972-75 period will be in the order of 26,000,000 pesos.

Other assistance

159. Several loan packages related to this sector are currently under consideration by the IDB.

HUMAN RESOURCES

Health Sector

Background

160. The indicators universally accepted to establish the health situation of a particular country or group show that in Bolivia this situation is markedly deficient. Annually, 16 persons per thousand die, half of which are children under 5 years of age. Of every six children born, one dies before the age of one. Analyzing the causes of death, one realizes that 80% of these deaths are due to diseases for which cure and prevention are medically known and even more, some of them can be totally eliminated, such as yellow fever and typhus. Through these figures, it is easy to see factors which affect negatively the development of the country such as a low labour productivity and absentism due to sickness; poor use of income devoted to medicines and a markedly unbalanced proportion of money spent on prevention as against treatment of sick people.

161. Considering the serious health problems of the country and the potential demand for medical and sanitation services, these resources actually available are totally insufficient. There are only three medical hours daily and two beds available for every one thousand inhabitants. 90% of the hospitalization resources available are found in urban areas, with more than one thousand inhabitants while the rural areas are, for the most part, totally uncared for.

162. Four factors influence the health conditions of the country. In the first place, the age factor of the population of Bolivia: 50% of the population is under 20 years of age, which represents a high proportion of the population highly susceptible to parasytic and infectious diseases. Two thirds of the population are dispersed or in small nuclei in the rural areas of the country without adequate means of communications which makes it impossible for them to have access to provide adequate medical services. The second factor is the low nutritional level of the population. Studies for Bolivia indicate that two thirds of children under 15 years of age suffer from malnutrition. The most important cause for this malnutrition is the low intake of calories and animal proteins. The

./..

third factor is the hostile, contaminated and infected living conditions which constitute a constant risk to health. In Bolivia, only 8% of the localities have drinking water systems; less than 2% of the localities have a system for the elimination of human waste. A great percentage of the population live in housing considered unhealthy. Other factors are the contaminated foods as well as the low income levels which make it impossible for most of the population to have the necessary means for prevention or treatment of disease, and to overcome the extremely poor condition of sanitation.

Objectives

163. The main objectives within this sector are to increase the health levels of the population and consequently to increase the average life expectancy; to make accessible to the marginal population the beneficial aspects of health, to expand the social security structure in favour of the campesinos; to incorporate the general realm of health protection to the needy sectors of the population. To achieve these objectives, the following actions should be taken:

1. To establish and coordinate the health objectives;
2. To gather data regarding the vulnerable sectors of the population;
3. To erradicate and control malaria, exantematic typhoid, yellow fever, smallpox and rabies;
4. To reduce TB, venereal diseases, dyphteria, haemorragic fever, tetanus, poliomielities, lepra, chagas, respiratory and parasytic diseases and infections;
5. To improve and amplify the capacities of hospitals and rehabilitation centres. To provide for more water systems and letrines as well as waste elimination systems. Also to increase the nutritional level of the population through programmes of nutritional recuperation, nutritional education and clinical studies. And, finally, to improve the medical attention available by improving the training of the personnel involved, giving it better equipment and by making it possible for it to extend its services to rural areas.

./..

UNDP assistance - Ongoing and/or approved projects - Health

Epidemiology BOL/68/019 WHO

164. This project was approved in 1969 and consists of one expert to assist the authorities in the establishment of methods that will help control the principal infectious diseases. US$ 60,000 are programmed for the 1972-74 period which covers the services of an epidemiologist for 24 months. The Government's contribution will be 1,347,000 pesos. The project should end in April 1974.

Health Statistics BOL/69/001 WHO

165. The assistance of one health statistician to advise the authorities in the field of statistics will be continued in 1972 and 1973. US$ 60,658 are programmed under the IPF respectively mainly for one expert during this period. The Government counterpart contribution will be 1,334,000 pesos. The Government is very much interested in having this project continued under the auspices of the United Nations Fund for Population Activities (UNFPA).

Integrated Health Services BOL/68/017 WHO

166. One sanitary engineer to advise on the installations of letrines, sewers, waste treatment plants and drinking water supplies will be continued under the IPF betwen 1972 and 1973. For this period US$ 41,000 are programmed which cover basically the services of the sanitary engineer. The Government counterpart contribution is 5,970,000 pesos.

Occupational Health BOL/69/010 WHO

167, This project, aimed at aiding the authorities in controlling and reducing occupational diseases in the mines and factories, was approved in 1970. Since that time, however, the Executing Agency has been unable to fully implement this project. For 1972 and 1973 US$ 172,000 have been allocated within this project, mainly for experts, US$ 110,000, fellowships US$ 20,000, and equipment US$ 42,000. T e future of this project was being discussed at the time of writing of this document. The Government contribution will be 9,482,000 pesos.

New Projects

168. None.

Other assistance

169. It is worth pointing out in relation to the lack of new UNDP-backed projects in the health sector, that the latter is relatively well covered both by the other UN agencies working in that field and by bilateral agencies. For instance, WHO which has a large number of regular programmes in Bolivia, is at present working on the elimination of smallpox, the control of tuberculosis, control of rabies, the control of typhus, environmental health, water supply, nutrition, medical and nursing training, sanitary engineering, veterinary medicine and dentistry.

170. UNICEF has also been working with the Bolivian Government in national development plans since the 1950s. The first stage, UNICEF worked above all in school nutrition programmes and on malaria erradication programmes. Since 1957 and until 1972, UNICEF worked with the Ministry of Health on the development of extension services for the improvement of the rural public health services on a national scale. Like WHO, UNICEF collaborated with the Government from 1960 to 1966 in the fields of health, personnel training, environmental health, social services and with the national rural development plan through the three centres for this programme: Pillapi, Playa Verde and Otavi; thus, in conjunction, both WHO and UNICEF programmes are worth close to 1 million dollars a year for Bolivia alone. To this, one should add the assistance being provided by the Argentine Government through an 8 million dollar programme for a sanitary plan on the Bolivian border with Argentina. This programme consists of the elimination of endemic diseases such as Chagas, goitre and malaria. However, 30% of this sum will be used for the construction of clinics and the acquisition of medical equipment.

171. USAID is also working in the schools nutrition field and between 1967 and 1972 provided US$ 82,000 for the drawing up of a schools' nutrition plan, which would provide for balanced meals and nutritional education for some 352,400 students per school year. This has worked in coordination with Food for Peace, which has since distributed some 9.5 million dollars worth of food products.

HUMAN RESOURCES

Education and Cooperatives

Background

172. It is estimated that approximately 30,000 students a year are incorporated into the student population. Yet 55% of the population between six and nineteen years does not receive schooling and the drop-out rate is alarming. Also, particularly alarming is the low level of student retention of the elementary rural schools which is about 5.4%. Equally low are the retention levels of elementary and middle level schools in the urban areas. It has been calculated that only one of every four students finishes his studies. One unfortunate result of this situation is the high illiteracy rate which is about 63%.

173. Other serious problems of the educational sector are the great number of institutions in charge of administering educational services. In Bolivia, educational services are exercised by various institutions: the Ministry of Education, COMIBOL, YPFB and private entities. Equally, some twelve other State institutions maintain educational programmes. Added to this is the extreme centralization of decision-making, thus making the educational problem more and more acute with the passing of time due to the lack of adequate planning and permanent coordination.

174. Some of the basic national objectives as regards education are as follows:

a) To restructure and integrate the various educational services;

b) To expand the educational services at the very basic levels in favour of rural and urban areas;

c) To amplify and diversify education at the middle levels and at the professional levels. It should be tightly linked to the formation of middle-level technicians needed for the development process of the country, placing emphasis on technical, industrial and agricultural training;

d) To rationalize the use of human, physical and financial resources available to the educational services;

e) To eliminate the educational deficit;

f) To diminish the rate of illiteracy; and finally

./..

g) To improve the general quality of education by improving educational concepts, the techniques of teaching and by improving the quality of the teaching staff.

UNDP assistance - Ongoing and/or approved projects - Education and cooperatives

Educational Planning BOL/68/015 UNESCO

175. The expert in Educational Planning arrived here in 1971. His main activities since that time have centred around an analysis of the educational system and also in helping the authorities draft a study for the diagnosis of Bolivia's educational system. For 1972 and 1973, US$ 40,000 have been approved mainly to cover the services of the expert. The expert is working with the Educational Planning Division of the Ministry of Education. The counterpart contribution is approximately 11,753,000 pesos mainly to cover the salaries of people on the educational planning division of the Ministry. It should be mentioned that a new educational law has just been approved for Bolivia. The Ministry of Planning will consider requesting more amounts of money within this sector pending the outcome of the execution of the newly-approved law.

176. In the area of education, it should be mentioned that Bolivia is a participant of the Regional Project 223. A joint UNESCO/ITU mission recently spent two weeks in Bolivia gathering data and was most optimistic about the possibilities of the country in the field of teleducation.

Scientific Documentation Centre BOL/68/013 UNESCO

177. One expert is programmed for 1972-73 to assist the Documentation Centre train personnel and advise on the latest documentation techniques. The expert will also aid other institutions tackle their documentation problems. Total UNDP contribution for 1972-73 is US$ 30,000 to cover the services of the expert. Counterpart contribution will be 404,000 pesos.

Supervised Credit to Rural Cooperatives BOL/68/004 ILO

178. The Government requests that the services of an expert in cooperatives who came in early 1972 be continued until March 1973. His main activities center around helping rural cooperatives set up efficient credit schemes. The UNDP contribution for 1972-73 is US$ 30,000. The Government counterpart contribution is 777,000 pesos.

./..

New Projects

Educational Planning

179. As an extension of this project, the Government is requesting that the post of expert in educational planning be continued through December 1976. Total UNDP contribution for 1973 through December 1976 as such being requested is US$ 110,000. The Government has not specified the activities that they want the expert to carry out between 1973-76.

Scientific Documentation Centre

180. As a continuation of this project, the Government is requesting that the expert in Scientific Documentation be programmed through December 1973 at a total cost to UNDP of US$ 7,500. The expert would work with the Scientific Documentation Centre and would also assist other public institutions to devise solutions to their documentation problems.

Cooperative Policy and Development

181. Background: The cooperative movement is characterized by the lack of organization, coordination and its general diffusion. Nevertheless, the cooperative movement is a positive instrument in the social and economic development of small income groups and for those living on marginal earnings. As such, the development of the cooperative movement must be seen from its associative, economic and functional points of view.

182. The objectives of the Government in this sector are:

a) Promote the cooperative movement seeking its integration, autonomy and efficiency;
b) Promote the training of cooperative personnel at all levels;
c) Promote the development of cooperatives that will follow the modern principles of training, organization and overal functioning; and
d) Systematize cooperative education.

Priorities:

- To establish the "Instituto Nacional de Cooperativismo", which will promote the unity, association and organization of consumer cooperatives;

./..

- To organize cooperatives by branches of economic activity, by objectives, by goods and services, and by geographic regions;
- To revise the legislation of cooperatives;
- To establish a system whereby university graduates would serve one year in production cooperatives; and
- To develop rural cooperatives in the following areas of activity: forestry, cattle, fish and game, agriculture.

183. The legal instrument to execute and accomplish the above will be the General Cooperative Law. The financial means will be sought from public, private, foreign and national bodies. The agency for cooperative development will be the National Cooperative Institute designed to promote, educate, advise and fiscalize cooperative activities.

184. Towards these ends, the Government is requesting an expert for 1974 and 1975. He may also be asked to assist in the channeling of a proposed IDB loan to give financial assistance to rural cooperatives. The UNDP contribution would be US$ 60,000.

Other assistance

185. As in the case of the health sector, the educational sector is one of the areas in which the Bolivian Government is very confident of being able to find multilateral and bilateral assistance other than that provided by UNDP-backed projects. Mention of a few will suffice.

186. For a long period, UNICEF has collaborated with the Government in this field, above all in the training of primary school teachers for rural and urban areas. UNICEF, in collaboration with UNESCO, helped the Government create the Instituto Superior de Educación Rural (ISER) which has given the Government a possibility of having a permanent preparation and training centre for rural teachers. This rural normal school programme has been backed by WFP-assistance in the field of nutrition which has consisted of providing additional food products for rural normal schools. Since the start of this project in 1971, approximately 1 million dollars worth of food has been provided to the Bolivian Government for this purpose.

./..

187. USAID between 1967 and 1972 provided approximately 1 million dollars, both for the improvement of school text books and the curriculum services within the Ministry of Education as well as to improve the library services in universities and normal schools.

188. The Bank for Interamerican Development is providing 2.3 million dollars worth of loan and technical assistance for the universities of Santa Cruz, Cochabamba and Oruro in order to improve teaching and research facilities. These include the construction of lecture rooms with modern equipment and increase in the number of teaching personnel and assistance to administrative personnel.

189. Similarly, the OAS is providing the universities with a number of teachers in highly specialized fields.

190. One should mention finally that almost all countries with diplomatic representation in Bolivia provide a number of post-graduate fellowships in their respective countries, above all for technical training. The number of these probably reaches 250 per annum. The same countries also provide teaching equipment and teachers themselves on a short-time basis for Bolivian technical training schools and schools in general.

INDUSTRY

Background

191. During the 1965-71 period, the industrial sector contributed an average of 11.8% of the GNP (NOT including hydrocarbons). The participation of the foodstuff industry in the same period was approximately 23.4% in the average and of the non-foodstuffs about 76.6%. During this same period, the cumulative annual growth rate of the industrial sector was 5.5% while the economy in general grew by 6.2%.

192. The structure of industrial production reflects the national degree of under-development as it is based on the production of non-durable consumer goods (65%) and, on a lesser scale, in the production of intermediate goods (32%). The production of capital goods is minimal: 3%.

193. The industrial production presents the following composition: for the year 1970, non-durable consumer goods were mainly foodstuffs in the sugar and milling industry; intermediate goods were represented mainly by the textile industry which covered about 50% of intermediate goods produced, followed in importance by the chemical industry, the pharmaceutical industry and the production of non-metallic minerals. Capital and durable consumer goods are represented by the metal-mechanic industry, which is the only one of relative importance.

194. This structure, with the predominance of non-durable goods produced by industry, is due to the fact that small investment is required, the technology is quite simple and the labour cheap and non-specialized. The structure is also characterised by its external dependency for the importation of raw materials. Other aspects of this structure are low productivity, disguised unemployment, obsolete machinery. This is particularly seen in the textile industry which has machinery which is twenty to thirty years old.

195. In 1965, 137,000 persons were actively employed in the industrial sector. In 1971, this figure reached 163,000. In view of the population growth during this period, it is possible to see that the industrial sector was on the whole an important source of employment.

196. During 1971, the construction industry employed approximately 28,700 persons. The handicrafts and small arts, during the same year, employed about 144,000.

../

197. Some basic problems for the development of industry in Bolivia are to be found in its restricted market due to the low per capita income. In addition, one can also consider the negative distribution of income, the lack of integration between various regions of the country and the lack of integration found amongst the greater part of the population. That is to say that the rural population is hardly a part of the market economy.

Main policies related to industrial development

198. The most dynamic industrial activities will be chosen for their development, seeking an accommodation between the need to introduce capital-intensive technologies and the existing problem of unemployment. The main activities to be developed will be those that produce intermediate goods which in their turn will be able to give support to the development of other industrial activities. On the other hand, industry will be geared towards a larger market within the Andean region and the ALALC and therefore the existing industry will have to reconvert or to realign itself to take into account the probability of larger internal and external markets. Finally, new industries will be located throughout the country taking into account the different poles of development.

199. The long-range objectives for an industrialization policy for the country will be to double the present industrial occupation, to increase the participation of the sector to about 25% of the GNP and to increase three times the present industrial production. An important part of the industrialization programme will be financed directly through the public sector or through mixed companies. Yet, it is also hoped by definite incentive policies to attract foreign capital for those areas of industrial production which are not strictly reserved to the public sector.

UNDP assistance - Ongoing and/or approved projects

Experimental Production Plant for Asbestos Processing
BOL/68/520 UNIDO

200. This project became operational in February 1970 with an original contribution of US$ 257,500 and a Government contribution of US$ 238,200. The project was to be completed in two years but delays in project execution have delayed completion date until June 1973. The delays have also increased project costs considerably. The main objective of the project is to set up an experi-

../

mental asbestos beneficiation plant to produce materials which will supply the internal and external markets. This plant will provide the basis for several other asbestos-related industries, as well as develop the asbestos mining area of Cochabamba. The 1972-73 UNDP contribution is US$ 668,000 mainly for experts (US$ 60,000), subcontracts (US$ 560,000), fellowships (US$ 5,000), and equipment (US$ 81,400). The Government's contribution for 1972-73 is in the order of 3,500,000 pesos mainly for personnel, 300,000 pesos; equipment, 1,340,000 pesos and items under the heading of various for a total of 1,700,000 pesos. The Government counterpart agency is the Corporación Boliviana de Fomento.

Ceramics Industry BOL/70/004/UNIDO

201. This project was completed in June 1972. The activities of the UNIDO expert were successfully carried out as he discovered various rich deposits of refractory materials. He also carried out various feasibility studies for a glass factory, caolín factory, a tile plant and a sanitary furniture factory. Credits are being obtained to put these up. The UNDP contribution was US$ 15,000 for 1972.

New Projects

Ceramics industry

202. As a continuation of the project mentioned in paragraph 201, the Government is requesting that another US$ 30,000 be programmed for 1973-74 so that the same expert can be obtained to supervise the final installation and start-up of the tile plant being installed by a Czchek firm. The Government's contribution will be in the order of 1,000,000 pesos and the counterpart agency will be the Corporación Boliviana de Fomento.

Metal-Mechanics

203. One of the priorities assigned to Bolivia within the Andean Group is the manufacture of certain light engineering products.

204. To help Bolivia in future negotiations in this subsector as well as in acquiring the needed technical competence, the Government requests that expert and/or consultants be financed by UNDP to work with the various national entities concerned. For this, US$ 90,000 are being requested for 1973 and 30,000 for 1974. The counterpart contribution will be 1,160,000 pesos.

../

Quality Standards - UNIDO

205. The Government requests UNDP to finance a programme between 1974 and 1976, aimed at assisting the Dirección de Normas y Tecnología of the Ministry of Industry and Commerce to improve its quality control programme. The project must be seen in terms of Bolivia's needs to strenghten its position vis-a-vis the regional markets which it cannot do without an effective quality control of all its products. The requested UNDP contribution is US$ 184,800 mainly for experts and equipment. The Government's contribution will be 6,472,000 pesos.

Other assistance

206. The IDB has given considerable assistance to this sector. Firstly, a 2.1 million dollar loan between 1966 and 1972, in order to carry out pre-feasibility studies for industrial development. Secondly, that Bank contributed with a 10.8 million dollar loan to finance the programme of credits for the industrial sector (to include mining, tourism and handicrafts), for the years 1966-74. Also included in this assistance is the reorganization of the Corporación Boliviana de Fomento, the Bolivian Development Corporation. Similarly, 2.5 million dollars were provided for the COMIBOL (State mining agency) for the acquisition of equipment and industrial machinery.

207. Finally, USAID provided 217,000 dollars between 1967-72 to establish a savings and credit cooperative which would provide investment for industry or for agro-industrial projects.

PROJECT CONTROL, PLANNING AND SUPPORT

New Project

208. The difficult budgetary situation of the country has had, in the past, negative effects on the conduct of projects, as documented in the description of technical assistance in the Background Document. On different occasions, national and international funds, time and equipment have been wasted precisely because of the difficulties encountered by counterpart agencies in making timely contributions of their acquired commitments. There have also been instances of useful and needed projects that have had to be cancelled because of the same reasons.

209. In order to avoid difficulties and waste of resources in the future, the Government of Bolivia has suggested the creation of a fund of US$ 216,000 out of the IPF, to be used during the 1972-76 programming period, to help overcome obstacles and ensure the smooth operation of UNDP-assisted projects. While the money would be used to face emergencies met at given times by one or another national counterpart agency, it will only be used in extreme cases when other efforts have failed to produce on time the needed counterpart financial resources. In all cases, it will be used after consultation and with the approval of UNDP Headquarters. In the full expectation that the Government's financial situation will be improving in the immediate years, this fund is phased to be used on a decreasing basis.

PRELIMINARY LIST OF PROJECTD
WITH
ESTIMATED GOVERNMENT AND UNDP INPUTS IN
FINANCIAL TERMS FOR THE PERIOD 1972-1976

ESTIMATED TOTAL GOVERNMENT FINANCIAL INPUT: $b. 144,223,000 (in local currency units) IPF: US$ 15,000,000

Estimated Government Inputs in thousands of						Activities by Sector	Estimated UNDP Inputs in thousands of US$					
1972	1973	1974	1975	1976	Total		1972	1973	1974	1975	1976	Total 72-76
						Sector: INFRASTRUCTURE						
						A. Ongoing/approved projects						
41					41	1. Railways - BOL/71/525	529	22				551
36	9				45	2. Cost Accounting BOL/70/008	30	13				43
415	415				830	3. Civil Aviation BOL/68/020	42	36				78
336					336	4. Telecommunications BOL/68/021	67					67
5	1125	217	161		1508	5. Telecommunications Training Centre BOL/71/518	5	322	266	132		725
336	336				672	6. Energy Programmer BOL/70/006	30	30				60
21					21	7. Energy Resources BOL/71/532	1					1
2011	3014	3464			8489	8. Meteorology BOL/70/526	285	250	34			569
	256				256	9. Rationalization of Foreign Trade BOL/72/011		27	6			33

Estimated Government Inputs in Thousands of Bolivian Pesos						Activities by Sector	Estimated UNDP Inputs in thousands of US$					
1972	1973	1974	1975	1976	Total 72-76		1972	1973	1974	1975	1976	Total 72-76
						Sector: INFRASTRUCTURE						
						A. Ongoing/approved projects						
						10. Cartagena Agreement BOL/71/007	25					25
						11. Basic Statistics BOL/68/001	8					8
1660	2300				3960	12. Administrative Reform BOL/69/008	78	90				168
	550				550	13. Regional Planning BOL/71/010	13	22				35
						14. Development Planning BOL/72/001	3					3
4861	8005	3681	161		16708	INFRASTRUCTURE TOTAL "A"	1116	812	306	132		2366
						B. New Projects						
259	836	257			1352	1. Railways BOL/72/002	150	694	146			990
		415	415	415	1245	2. Civil Aviation BOL/68/020			40	40	40	120
						3. Rationalization of Foreign Trade BOL/72/011		8	87	87	87	269
						4. Cartagena Agreement BOL/71/007		25				25
						5. Regional Planning BOL/71/010		23	165	305	150	643
	512	1115	733	143	2503	6. Inventory Energetic Resources BOL/71/532		34	379	208		621
						7. Administrative Reform BOL/69/008			45			45
						8. Transport Coordination Unit		30	30			60
259	1348	1787	1148	558	5100	INFRASTRUCTURE TOTAL "B"	150	814	892	640	277	2773

Estimated Government Inputs in thousands of Bolivian Pesos						Activities by Sector	Estimated UNDP Inputs in thousands of US$					
1972	1973	1974	1975	1976	Total 72-76		1972	1973	1974	1975	1976	Total 72-76
						Sector: NATURAL RESOURCES						
						A. Ongoing/approved projects						
3561	1775				5336	1. Groundwater Development in the Altiplano BOL/68/514	350	170				520
5340					5340	2. Survey of the Mutun Iron Ores & Manganese Deposits BOL/70/527	221	123				344
336	561				897	3. Mining & Metallurgical Research Inst., Oruro BOL/70/015	32	16				48
70	140				210	4. Market Study for Bismuth & Antimony BOL/72/010	7	7				14
						5. Study of Smelting Plants BOL/73/001		1				1
336					336	6. Mineralogy BOL/71/002	5					5
5741	17857				23598	7. Centre for Petroleum Development BOL/65/510	145	102				247
15384	20333				35717	NATURAL RESOURCES TOTAL "A"	760	419				1179
						B. New Projects						
	561	561	561	561	2244	1. Mining & Metallurgical Research Inst.,BOL/70.015		38	30	30	30	128
	4448	3124	998		8570	2. Hydrologic Study, Cochabamba		394	17			411
	561	617	617	617	2412	3. Assistance to the Mining Industry		30	40	40	40	150
	416	208			624	4. Natural resources Inventory		100	50			150
	1457				1457	5. Radioactive minerals prospection		39				39
		1181	1229		2410	6. Centre for Petroleum Development BOL/65/510			15	15		30
	7443	5691	3405	1178	17717	NATURAL RESOURCES TOTAL "B"		601	152	85	70	908

Estimated Government Inputs in thousands of Bolivian Pesos						Activities by Sector	Estimated UNDP Inputs in thousands of US$					
1972	1973	1974	1975	1976	Total 72-76		1972	1973	1974	1975	1976	Total 72-76
						Sector: AGRICULTURE A. Ongoing/Approved projects						
4681	7991	3783			16455	1. Agro-Industrial Development in the Abapo-Izozog region BOL/69/516	488	1125	569	200	200	2582
						2. Animal Health BOL/68/519	220					220
1055	2301	192			3548	3. Animal Health BOL/72/007	57	181	30			268
	549				549	4. Improvement Agricultural Production, Altiplano BOL/68/521	466	173				639
5736	10841	3975			20552	AGRICULTURE TOTAL "A"	1231	1479	599	200	200	3709
						B. New Projects						
		3790	3437	3536	10773	1. Animal Health BOL/72/012			281	225	177	683
						2. Agro-Industrial Development, Abapó-Izozog region BOL/69/516			100	300	100	500
		3790	3437	3536	10773	AGRICULTURE TOTAL "B"			381	525	277	1183

Estimated Government Inputs in thousands of Bolivian Pesos						Activity by Sector	Estimated UNDP Inputs in thousands of US$					
1972	1973	1974	1975	1976	Total 72-76		1972	1973	1974	1975	1976	Total 72-76
						Sector: HUMAN RESOURCES						
						A. Ongoing/approved projects						
449	449	449			1347	1. Epidemiology BOL/68/019	22	30	8			60
667	667				1334	2. Health Statistics BOL/69/001	41	20				61
7755	1727				9482	3. Occupational Health BOL/69/010	20	152				172
2985	2985				5970	4. Integrated Health Services BOL/68/017	36	5				41
5786	5967				11753	5. Educational Planning BOL/68/015	30	10				40
202	202				404	6. Scientific Documentation BOL/68/013	8	22				30
407	370				777	7. Cooperatives BOL/68/004	23	7				30
18251	12367	449			31067	HUMAN RESOURCES TOTAL "A"	180	246	8			434
						B. New Projects						
						1. Educational Planning BOL/68/015		20	30	30	30	110
	Data not available.					2. Scientific Documentation BOL/68/013		8				8
						3. Cooperative Policy			30	30		60
						HUMAN RESOURCES TOTAL "B"		28	60	60	30	178

Estimated Government Inputs in Thousands of Bolivian Pesos						Activities by Sector	Estimated UNDP Inputs in thousands of US$					
1972	1973	1974	1975	1976	Total 72-76		1972	1973	1974	1975	1976	Total 72-76
						Sector: INDUSTRY						
						A. Ongoing/approved projects						
336					336	1. Ceramics BOL/70/004	15					15
2800	700				3500	2. Experimental Plant for Asbestos Processing BOL/68/520	625	43				668
3136	700				3836	INDUSTRY TOTAL "A"	640	43				683
						B. New Projects						
	885	970			1855	1. Ceramics		15	15			30
						2. Metal-Mechanics		90	30			120
		328	400	170	898	3. Quality Control			73	97	15	185
	885	1298	400	170	2753	INDUSTRY TOTAL "B"		105	118	97	15	335

Estimated Government Inputs in thousands of Bolivian Pesos						Activities by Sector	Estimated UNDP Inputs in thousands of US$					
1972	1973	1974	1975	1976	Total 72-76		1972	1973	1974	1975	1976	Total 72-76
						Sector: Project Control						
						Project Control, Planning, and Support		70	55	46	45	216

Estimated Government Inputs in thousands of Bolivian pesos						SUMMARY OF ALL SECTORS	Estimated UNDP Inputs in thousands of US$					
1972	1973	1974	1975	1976	Total 72-76		1972	1973	1974	1975	1976	Total 72-76
47368	52246	8105	161		107880	TOTAL "A"	3927	2999	913	332	200	8371
259	9676	12566	8390	5442	36333	TOTAL "B"	150	1618	1658	1453	714	5593
						Unprogrammed Reserve		436	200	200	200	1036
47627	61922	20671	8551	5442	144213	GRAND TOTAL	4077	5053	2771	1985	1114	15000

ANNEX II (i)

PRELIMINARY LIST OF PROJECTS WITH TENTATIVE TIMETABLE FOR PROJECT FORMULATION AND IMPLEMENTATION

(XXX - Tentative period for implementation; ---- Tentative period for formulation, appraisal, approval, Executing Agency and Government preparatory activities; oooo - execution phase of ongoing projects which will tie in with new projects).

B O L I V I A	1972	1973	1974	1975	1976	Remarks
	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	
INFRASTRUCTURE						
A. Ongoing/approved projects						
Assistance to Railways I	XXXXXXXXXXXXXXXX					
Civil Aviation	XXXXXXXXXXXXXXXXXXXXXXXX					
Cost Accounting	XXXXXXXXXXXXXXXXXX					
Telecommunications	XXXXXXXXXXXXX					
Energy Programmer	XXXXXXXXXXXXXXXXXXXXXXX					
Energy Resources Evaluation	X					
Meteorology and Hydrology	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX					
Foreign Trade Rationalization		XXXXXXXXXX				
Cartagena Agreement	XXXXXXXXXXXX					
Telecommunications Training Centre	oooooooooooXXXXXXXXXXXXXXXXXXX

B O L I V I A	1972 JFMAMJJASOND	1973 JFMAMJJASOND	1974 JFMAMJJASOND	1975 JFMAMJJASOND	1976 JFMAMJJASOND	Remarks
AGRICULTURE						
A. Ongoing/approved projects						
Agro-Industrial Development in the Abapo-Izozog Region	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXX	
Animal Health Programme	XXXXXXXXXXXX	XXXXXXXXXXXX	X			
Improvement of Agricultural Production, Altiplano	XXXXXXXXXXXX	XXXXXXXX				
B. New Projects						
Animal Health BOL/72/012			oooooXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	
Agro-Industrial Development in the Abapo-Izozog Region			oooooooooXXXXXXX	XXXXXXXXXXXX	XXXXXX	
NATURAL RESOURCES						
A. Ongoing/approved projects						
Groundwater Development, Altiplano	XXXXXXXXXXXX	XXXXXXX				
Mining & Metallurgical Research Inst., Oruro	XXXXXXXXXXXX	XXXXXX				
Mineralogy	XX					
Market Study, Bismuth & Antimony	XXXXXX					
Study Smelting Plants		X				
Centre for Petroleum Development	XXXXXXXXXXXX	XXXXXXXXXXXX				
B. New Projects						
Hydrologic Study, Cochabamba		oooooooXXX	XXXXXXXXX			
Mining & Metallurgical Research Inst., Oruro		XXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	
T.A. to Mining Industry		XXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	
Natural Resources Inventory		XXXXXXX	XXXXXXXXXXXX			
Radioactive Minerals Prospection		XXXXXXXX				
Centre for Petroleum Development		oooooo	XXXXXXXXXXXX	XXXXXXXXXXXX		

B O L I V I A	1972 J F M A M J J A S O N D	1973 J F M A M J J A S O N D	1974 J F M A M J J A S O N D	1975 J F M A M J J A S O N D	1976 J F M A M J J A S O N D	Remarks
HUMAN RESOURCES						
A. Ongoing/approved projects						
Epidemiology	XXXXXXXXX	XXXXXXXXXXXXXXXX	XXXX			
Health Statistics	XXXXXXXXXXXXX	XXXXXXXXX				
Integrated Health Services	XXXXXXXXXXXXX	XX				
Occupational Health	XXXXXXXXXXXXX	XXXXXXXXXXXX				
Educational Planning	XXXXXXXXXXXXX	XXXX				
Scientific Documentation	XXXX	XXXXXXXXXXX				
Supervised Credit to Rural Cooperatives	XXXXXXXXXXX	XXX				
B. New Projects						
Educational Planning		XXXXXXXXX	XXXXXXXXXXXXXXX	XXXXXXXXXXXXXXX	XXXXXXXXXXXXX	
Scientific Documentation		XXX				
Cooperative Policy			XXXXXXXXXXXXX	XXXXXXXXXXXXX		
INDUSTRY						
A. Ongoing/approved projects						
Experimental Plant for Asbestos Processing	XXXXXXXXXXXXX	XXXXXX				
Ceramics	XXXXXX					
B. New Projects						
Metal-Mechanics		XXXXXXX	XXXXXXXXXXXX			
Quality Standards		XXXXXXX	XXXXXXXXXXXXX	XXXXXX		
Ceramics		XXXXXXX	XXXXXX			
PROJECT CONTROL, PLANNING & SUPPORT		XXXXXXX	XXXXXXXXXXXXX	XXXXXXXXXXXXX	XXXXXXXXXXXX	